
MEDICAL REPOSITORY,

FOR

AUGUST, SEPTEMBER, AND OCTOBER, 1806.

OBSERVATIONS *on the* MORTALITY *by* YELLOW FEVER, among the SEAMEN of the UNITED STATES, who, with northern Constitutions and Habits, sail to Havanna, in Cuba; and on the HEALTH and LONGEVITY of the Native SPANISH INHABITANTS. By HENRY HILL, Esq. Commercial Agent for the UNITED STATES at that City: Communicated to Dr. MITCHILL by the Secretary of State.

A LIST of American seamen and others citizens of the United States, who died at Havanna, from June, 1805, until January, 1806, has been kept by Henry Hill, jun. Consul of the United States at that port. This record contains the names and conditions of the deceased; the denominations and names of the vessels to which they were attached; the names of the masters, and the ports to which they belonged; the usual residence, time of death, the disease, and the native country of the deceased. Of the eighty-six who ended their days there, all except one were victims of fever, and that one was poisoned by eating fish—and all except six were natives of the United States. The table, at large, we omit, but insert Mr. H.'s remarks on the West-India fever.

Observations and Remarks on the prevailing Fever, &c. at Havanna.

“Matters, connected with the trade of the United States to this port, induced me to keep a list of deaths of the seamen employed in it for my own curiosity, at the same time supposing it might be useful, in some respect, to the friends of the deceased, and not uninteresting to the government; for which reason I communicate it to the Department of State, with my other returns.

“The peculiar situation the office has been placed in, prevented my obtaining returns in every instance from masters

of vessels. The above list, therefore, is imperfect, comprising the names of eighty-six only, while I suppose about one hundred seamen have fallen victims to disease in this port, during the period above-mentioned. Upwards of three thousand American seamen entered here during that time, so that it appears about one-thirtieth of them were swept off. This is certainly a great mortality, particularly when it is considered how short is the usual stay of that class of people in port, which, on an average, does not exceed a month; yet it is not great, compared with some former seasons, in which double the number have fallen.

"The returns made from the different churches and hospitals of the Havanna state, that there were four hundred and eighty-three marriages, three thousand nine hundred and thirty-three births, and two thousand one hundred and thirty-five deaths among the inhabitants of the city the last year. That the births exceeded the deaths one thousand eight hundred persons, and that supposing the city to contain eighty thousand inhabitants, which it no doubt does, the proportion of deaths was about one in forty among the inhabitants. This would not be considered a great mortality in cities equally populous in Europe; but the season has been remarkably healthy, and the prevailing fever much less fatal than is usual; fewer deaths happening in proportion to the numbers attacked with it; which has been occasioned, no doubt, from natural causes, and not from any improvement in the art of cure.

"The summer was not so hot, nor the rains so frequent and abundant as usual. The average of the thermometer, from the month of June to November, has been about eighty-three degrees. It did not rise higher than eighty-six degrees, nor fall below seventy-seven degrees; the degree of heat being very uniform.

"It is from the month of June till November that the fever is most prevalent, and its effects the most fatal. Indeed, it is seldom known at any other season.

"Notwithstanding the supposed unhealthiness of the climate of this island, there is, perhaps, no country in the world, and certainly none within the tropics, that is more salubrious and congenial to the human constitution, when assisted by temperance in diet and exercise; nor any that furnishes more remarkable and frequent instances of longevity. It is by no means an uncommon thing to meet with persons from seventy to ninety years enjoying all their sensitive and

rational faculties, and some even who have arrived to the age of one hundred years and upwards.

"There are few low marshy lands: the soil is light and absorbent; and the greater part of the year the winds prevail from the northward and eastward; which, coming from the sea, are cool and salubrious, and blowing in a direction across the island, which is generally very narrow, and there being no very high lands to arrest the progress of the clouds, the atmosphere is continually changing and kept pure and wholesome.

"I am informed that in no part of the country epidemical or local diseases prevail; but this is not the case at Havanna. This city is situated on a plain, on the western side of a very narrow bay, and is deprived of the refreshing sea breezes by a hill on the eastern side; they are also impeded by a high wall surrounding the city, and what little air enters it, is denied a free circulation, owing to the very compact manner it is built, and the narrowness of the streets. These are mostly unpaved, without a sufficient descent to carry off the water lodged by the rains; and no attention is paid to the cleanliness of the city, or health of the inhabitants, by the police.

"The manner of depositing the dead in the churches (which is now interdicted by the Bishop, he having caused to be built a cemetery without the city for that purpose) has been supposed greatly to affect the health of the inhabitants. The streets are filled with mud and filth; the back yards accumulate dirt and nauseous matter, and are never perfectly cleansed, and the privies are kept in them, together with mules and dogs; and many yards have cisterns which are very unwholesome. From all these causes, clouds of putrid exhalations are formed in the atmosphere. No wonder then, during the summer months, when the sun is nearly vertical, rains frequent, and the winds changeable, that so populous a city should be unhealthy. Indeed, I think it would be uninhabitable, was it not for the blessing of a pure sea air that occasionally mixes with, and corrects its fetid atmosphere.

"The fevers of this climate seem to be much the same in their commencement, though their progress and termination are very different. The symptoms are in all cases similar, though in some stronger than others, in proportion to the violence of the attack. Their fatal effects are of so subtle a nature, as to seem immediately, or in twenty-four hours

after a strong attack, to reach the parts essential to life ; and unless, in the first stages of the disorder, successful remedies are administered to subdue the fever, it generally turns to the black-vomit, and terminates in death ; sometimes on the third, but generally not till the fifth or seventh day after its first appearance. This is particularly the case with foreigners. Upon the inhabitants its progress is less rapid, and not so fatal.

“ The strongest symptoms of the first attack are, a violent pain in the head and back, a weakness in the joints, and an evident dullness of mind and depression of spirits ; and in instances where the patient has suffered despondence to overcome his strength of mind, I have seen the progression of the fever much more rapid than in other cases, and seldom an instance of recovery from an attack of much violence. The difference observed in the course of the disorder, therefore, seems not so much occasioned by difference of treatment, and variety of the human constitution, as by the temper of the blood and state of the mind.

“ The most successful physicians here treat the fever in the most simple manner. In the first stage of the disease they endeavour to put the patient in a perspiration, by hot citron lemonade, and recommend this beverage to him for a common drink ; then administering cathartics, in which calomel constitutes a large proportion, they make frequent use of injections of warm water and olive oil, and when the fever is off, give bark.

“ Friction with sweet oil, has been frequently made use of with success ; and why it is not practised on every occasion, I have not heard any good reason.

“ Doctor Holliday, a Scotch gentleman, who has resided twelve years in this country, and has had great experience in practice, is usually employed by Americans, and has been very successful generally, where he has taken the patient in the early stage of the disease.”

A manuscript treatise by this physician, which Mr. H. has sent along, contains an account, written in Spanish, of his practice with oily unctions, and the warm-water bath in the fevers of Cuba. The oil must be fresh, and be applied universally to the whole surface of the body. The use of it ought to be free, so that the quantity rubbed on at a time should not be less than half a flask three hours from the first application ; the patient ought then to go into the warm-bath,

and continue there for a quarter or half an hour, according to strength and circumstances. The oily embrocation may be repeated once in three hours, for the first two or three days. The good effects of this course were very evident, and highly comfortable to the sick. Every third hour Dr. H. gave a laxative decoction of mallows, succory, and borragé, to which were added a few spoonfuls of vinegar and oil, or a solution of manna and Glauber's salt in tamarind-water, taken so as to produce a sufficient evacuation. As soon as the fever by these means is brought to a remission, he administers the Peruvian bark, mixed in wine, or wine and water, as the patient may choose, and taken as often as the stomach will bear.

From the same quarter we have received the Supplement to the *Havanna Aurora*, of October 30, 1805, which contains a republication of the abstract of the Spanish physician Lafuentes' Dissertation on the Yellow Fever, which had been published in the preceding July, in the *Royal Gazette of Madrid*. This being the work mentioned in our *Med. Rep.* Hex. ii. vol. iii. p. 445, as having been transmitted to us entire from Spain; we enter into no details about it at present, but reserve it for a distinct subject of review.

CURSORY OBSERVATIONS *on the SOIL, CLIMATE, and DISEASES of the State of GEORGIA.* By Dr. JOSHUA E. WHITE, *of Savannah.*

[Continued from Hex. ii. vol. iii. p. 365, and concluded.]

FROM the preceding facts and observations relative to our climate, it may be inferred that fevers* and other acute affections comprise much the greater part of our diseases. The former may, indeed, be more peculiarly considered as our endemic. They make up for the comparative rarity of chronic diseases,† which affect colder countries.

The gout is frequent. This is generally a disease of in-

* I here include the various kinds of fever, as unnecessarily designated by nosologists. They are only different states or grades of the same disease.

† Dr. Moseley says, "In tropical countries, people are seldom affected with dangerous *pulmonic* diseases. *Idiotism* and *mania* are very uncommon. *Lunacy* is almost unknown. *Scurvy* and *gravel* are diseases seldom to be met with; and the *stone* scarcely ever." He afterwards adds the dysentery, or an inflammatory fever, to that degree called the yellow fever, are the most formidable.

temperance, and is often hereditary. I have the authority of Dr. Rush to support me. He says, "the idle and the luxurious are more subject to it than the labouring part of mankind." And in another place he adds, "I have heard of a case of gout in an Indian at Pittsburgh, and I have cured a fit of it in an Indian in this city. They had both been intemperate in the use of wine and fermented liquors." I hazard the frowns and censure of the luxurious when I say that the "joint-racking" pains which they feel are commonly the effect of too free living, with too sedentary a life. Nor does the virtue of hospitality (which characterizes the people of Georgia and Carolina) exempt them from the blame which attaches to a life of intemperance. They too often entail misery on their offspring, besides shortening their own lives. "There is," says a modern writer, "in the inhabitants of hot climates, unless present sickness has an absolute controul over the body, a promptitude and bias to pleasure, and an alienation from serious thought and deep reflection. The brilliancy of the skies, and the levity of the atmosphere, conspire to influence the nerves against philosophy and her frigid tenets, and forbid their practice among the children of the sun." Temperance, pleasure, and hospitality, ought not to be at variance. The former is the guide to health; and while we enjoy rational delight, we should not suffer the luxuries of the table, or the gratification of sensual passions, to transgress the rules prescribed by temperance.

Tetanus is a disease more peculiar to hot climates, but a case has not come within my knowledge for more than five years. That species of it, or disease so analogous to the tetanus, which is endemical among children in some tropical countries, is equally rare here. It is called by the French *Mal de Mâchoire*; by the Latins, *Trismus Nascentium*; and by the English, *Jaw-fall*. It is known by the second title in Dr. Cullen's *Nosology*. Dr. Moseley, in speaking of it, says, "The deaths occasioned by this disease in the West-Indies constitute a greater drawback upon the population of the negroes than can easily be imagined, as the number that perish by it is scarcely to be credited." It is almost solely confined to the negro children. From whence, then, is it so seldom met with here? The same causes operate to produce it among the negro children in most of the large plantations, particularly in the lower country, viz. "the irritation of the navel after birth; the smoke of the lying-in room, the dampness of its situation, or the carelessly letting in

cold air upon the child."* These causes may sometimes occur; but it is more properly attributed to a shameful neglect in not having the child kept dry and clean; in not purging it so as to evacuate the intestines of the meconium, and first milk of the mother; and to the heat and smokiness of the cabins.†

I have not heard of a case of hydrophobia, although I have seen many persons who were said to have been bitten by mad dogs, but no bad effects followed. It is a soothing consideration, that rabies among dogs occurs less frequently than is commonly imagined, and that there are several circumstances sometimes concurring to prevent the ill effects of the poison upon the system. The most usual remote cause

* Moseley on Tropical Diseases.

† The occurrence of tetanus is more frequent than I had reason to suppose. I have lately met with a case, the consequence of a very slight punctured wound in the inside of the forearm, which terminated in death in a very short time; and I have heard of several others during the last year. It is well known, and was very commonly remarked, that soon after the late storm, the number of punctured wounds, particularly in the feet, from nails, glass-bottles, &c. was uncommonly great, and yet no instance occurred of a lock-jaw supervening. This is a singular circumstance, and merits notice. Whence arose this exemption from a disease amidst so frequent an application of the most common and dangerous causes? Was it owing to a change in the constitution of the atmosphere, from the extreme violence of the gale, taking off the predisposition in the system to high excitement from the application of local stimuli? That a favourable change was effected, in lessening the number of febrile diseases, was an obvious fact; and this, notwithstanding the immense quantity of dead vegetable and animal matter heaped upon our shores.‡

That species of convulsions in new-born children, so improperly called by Dr. Cullen, "*Trismus Nascentium*," must occur more frequently in the lower counties of Georgia than I once supposed. I speak not from experience, but I reason from the axiom, that the same causes, under similar circumstances, will produce similar effects. It need not be told to this society, how miserably in general the negroes are lodged, how badly fed and clothed, and how little attention is bestowed upon them in sickness. The necessity of at least common comforts to the mother in the parturient state, and to the infant, is too obvious to be mentioned; they seldom have them. This is a melancholy truth; the evil exists, and it is not irremediable. Its existence, so commonly, is not more degrading to the feelings of humanity than it is inimical to the soundest interests of policy. It is our duty to point out the existence of such physical evils as are capable of being removed; but, perhaps, in this instance more may be effected by the moralist.

‡ It has been already remarked by Dr. David Ramsay (and I coincide with him in opinion), that storms or hurricanes are perhaps the only effectual means which hot climates possess of purifying the air. They act as immense ventilators. Whether the good thus produced be equivalent to the evil, is not for me to determine.

in dogs, to which this formidable disease has been attributed, is heat; and, from this circumstance, it is asserted to occur most frequently in hot seasons and in hot climates. I am disposed to disbelieve this, and to adopt the idea of Dr. Moseley, that it arises from some peculiar influence of the air. For fifty years it was not known in the West-Indies. It made its appearance in Jamaica in 1783, and continued until the following year. Desportes, who practised physic for sixteen years in Hispaniola, says it was unknown there. Don Ulloa, in his voyage to South-America, says it is there a stranger, and the people express their surprise when they are told of its melancholy effects in Europe.

May not this disease, like many others, undergo certain changes or revolutions, depending upon some secret atmospheric cause?

Chronic rheumatism, gravel, and stone, are not so frequent as in the northern States. Of the last I have seen but one case. This was a man who suffered all the pangs of poverty and disease. He had felt symptoms of the stone for two years when I first saw him. His extreme emaciation rendered all hopes of cure fruitless. The pain was incessant and excruciating, and accompanied by a constant stillidium of urine. Added to these complicated ills, he was lodged in a cold uncomfortable house, not impervious to the rain, which brought on a dysentery, and quickly put a period to a life of misery. I opened the body, and extracted the calculus, which weighed rather more than two and an half ounces. Its shape is singular, being somewhat like that of a young duck. The body of it, if it may be so called, entirely filled the neck of the bladder, to which it firmly adhered; and the head-like appendix, I suppose, was afterwards formed from the upper end, being the only part exposed, so as to receive the depositions of earthy matter from the urine. The bladder would not have held more than six ounces, and its coats were nearly half an inch thick.

Diabetes seldom occurs. One case of that kind, known by the name of Diabetes Mellitus, has fallen under my notice, which baffled every mode of cure. The treatment advised by an English physician (see *Med. Rep.* vol. i. p. 259), and discovered by another, was tried without success.

Dropsies, arising from visceral obstructions, and these last from protracted intermittents, are not unfrequent. I lately opened the body of a negro man, who died after a short illness. The whole substance of the liver was filled with small

indurated swellings about the size of a pea, and it was of a pale yellow colour; the abdomen was filled with reddish serum. I was prevented examining the other viscera by the factor which the abdomen emitted.

Many have an obstruction of the spleen, or what is here called a fever-cake, during their whole lives, without much manifest injury. It becomes painful during a fever, and this is sometimes aggravated by it. Thus it acts somewhat like cause and effect. For the removal of this chronic obstruction, I have found no treatment so efficacious as repeated, but small, doses of calomel, occasionally aided by other purgatives, so as to keep the intestines freely open. In one instance, about 3 ij of Glauber's salt (sulphate of soda) repeated daily, produced the best effects. Bleeding is often necessary. In a state of apparent general debility the pulse will sometimes be found full and tense; at other times small, tense, and quick. It is nothing new for local affections, particularly visceral obstructions, to be accompanied by general inflammatory action. Hence, intermittents are sometimes cured by venesection; and, sure I am, much mischief sometimes arises from giving the bark for the cure of fever and ague, where there is already *too much* arterial action.

The class of diseases which, according to Dr. Cullen's nosology, consist in a depraved state of the whole, or of a considerable part of the habit of the body, and particularly that variety known by the name of *Mal d'Estomac*, or, as it is here called, dirt-eating, are frequently met with. The latter is so common as to be almost endemic in some places, and sometimes to produce such effects as to merit more attention than has been hitherto bestowed upon it. It is most common among the poorer class of white people (those especially who live in the pine-woods) and negroes, and is attended with the following symptoms: The countenance is pale and bloated; the skin of an olive complexion, and preternaturally cold to the touch; the breathing is difficult, and is easily hurried by brisk exercise; the pulse is small and weak, but sometimes tense, and the carotid arteries in the neck beat with unusual force; the tongue very white. The person is seldom disposed to take exercise, but is fond of a life of listless inactivity. The appetite is sometimes voracious, and is often insatiable for eating dirt, which forms the characteristic symptom of the disease. Epicurism is manifested by a nice selection of the purest clay; and I have been told of several families on the Ohiope

river, a stream tributary to the Altamaha, who sent several miles to procure it. The legs and face swell, and water ultimately collects in the abdomen and thorax.

The unhappy patients often linger for a long time in this disease. It evidently arises from bad living, for it is almost exclusively confined to those whose diet has consisted of things which furnish little healthy nourishment; among them may be mentioned salted smoaked meats and greens. These constitute the living of many people a greater part of the year, and we should not wonder if they diminish the quantity of oxygen in the system. We should also add to the above, the living in houses built of logs, and not impervious to the weather, with dirt floors, bad lodging and cloathing. It is always aggravated by long-continued intermittents, particularly those of the quartan type. They never fail to increase the schirrous obstructions in the liver, spleen, and mesenteric glands, which may be considered as one of the remote causes of the dropsical swellings.

In the cure of this malady, it will be found necessary to give tone to the stomach and whole system, by a gently stimulating and nourishing diet, warm cloathing, bitters, preparations of iron, and exercise adapted to the strength.

Consumptions are much more rare than in the New-England States. In this we must felicitate ourselves, for pulmonic complaints form a mournful part of the catalogue of fatal diseases in northern climates.

As it is usual for consumptives to visit this State in the winter, it may not be amiss to offer a few remarks respecting the choice of residence.

It has been said by a physician of Georgia, that *dry* situations near the sea are favourable to the consumptive. In opposition to this, it is asserted by Dr. Rush, that "the higher and dryer the situation which is chosen for the purpose of enjoying the benefit of this remedy (country air), the better. Situations exposed to the sea should be carefully avoided; for it is a singular fact, that while consumptive persons are benefited by the sea air, when they breathe it on the ocean, they are always injured by that portion of it which they breathe on the sea-shore."

Whatever reasons may be assigned for it, the truth is established, that a union of land and sea air is injurious to consumptive persons. May not this arise from some chemical combination?

A respectable physician of South-Carolina long ago

said, "that situations which are in the neighbourhood of bays or rivers, where the salt and fresh waters mix their streams together, are more unfavourable to consumptive persons than the sea-shore, and therefore should be more carefully avoided by them in exchanging city for country air."

From many experiments which have been made by Ingenhousz and others, it has been determined, that sea air is comparatively purer than land; and that, *cæteris paribus*, air over any large body of water is purer than that of the adjoining land. A late writer has supposed this may be "owing to a decomposition which the water may suffer from the action of the sun's rays, and this may likewise be assisted by its also absorbing many foreign matters, which, on land, are more or less intimately mixed with the air in a mechanical way.* While it will be doubted by many persons, that the air on the land is not more pure at some places than at others, and that the atmosphere is at all times nearly of the same purity, it does not admit of a doubt, that sea air is nearly the same in different latitudes. Hence, long voyages are favourable to consumptive people, and the good effects are more owing to the breathing pure air, than to the exercise of sailing, though this last no doubt contributes; and hence, they should be taught to choose situations where they will breathe the pure air of the sea, without any mixture of heterogeneous particles from the land. Few, if any such are to be found in this State. The maritime islands, though in some respects affording good situations, are too contiguous to swamps and marshes to furnish that kind of air which has been found so essential in consumptions of the lungs. Galen, in speaking of *Tabiæ*,† as a proper residence for consumptive people, and describing its situation, observes, "there is neither stagnant water, nor marsh, nor any river of consequence in its neighbourhood." Neither are the winters of Georgia sufficiently uniform in mildness to insure the good effects of breathing the *æer purus*, even if a situation combining every advantage could be found. The Bermuda and Bahama islands afford a much greater chance for the recovery of consumptive people. The former are situated at a great distance from any continent.‡ A late

* Seybert's Experiments and Observations on Land and Sea Air.

† Now called *Stabia* by the Italians. It is situated on the north-east side of the bay of Naples.

‡ Carolina is distant three hundred leagues, and is the nearest land.

writer, in speaking of the Bermudas or Summer islands, observes, "the air is healthy, a continual spring prevails. Cedars mantled in green always adorn the hills. The pasture ground is ever verdant; the gardens ever in bloom." Their distance from any other land, their rocky foundation, (hence there is no stagnant water nor swamps) the uniform mildness of the seasons (excessive heat being scarcely ever felt), and the purity of the air, (it being unclogged with any kind of vapours) combine to render them fit places of abode for those afflicted with pulmonary complaints. This agrees with the observations of Galen. That illustrious physician, after having given a description of *Tabiæ*, proceeds to observe: "Any elevated situation, in any other temperate climate, dry as this is, not far from the sea, neither so near as to be exposed to the violence of its winds, nor so low as to be subject to receive the vapours of any low grounds, not fronting to the north, nor yet too much exposed to the meridian sun, may produce the same salutary effects."

It is agreed on all hands, that the "*cœli mutatio*," or change of climate, is almost indispensable in all chronic affections of the lungs; but a mere removal is not sufficient; a judicious choice should be made of a situation, and a careful attention bestowed on diet and exercise.

Where the benefit of long voyages, or proper maritime situations cannot be enjoyed, it would be a good general rule to remove the patient to some place different in its topography from that where the disease was contracted. "It has ever been the practice," says a late author, "of physicians who studied nature, to remove their patients to situations opposite to those in which their diseases originated; from land to sea, from sea to land; from mountains to vallies, from vallies to mountains; and to remedy local diseases by local contraries. Change of climate has often caused a great revolution in the habit, and has performed miracles in diseases, without any intrinsic superiority in the air of the spot resorted to."*

But it is not so much *this* or *that* situation which is always calculated to remove deep-rooted affections of the lungs. The choice of residence must be first judiciously made,

* The venereal disease, contracted in England, and which baffled every remedy, has been cured by the climate of the West-Indies without medicine, and the salutary effects of change of air in the chronic stage of the hooping-cough are known to every person.

the change properly graduated to the state of the system, and the food carefully suited to the constitution. For the benefits resulting from a change in diet, when combined with exercise and change of situation, Sydenham advised his patients to remove from one place to another on horseback. Inflammatory action may sometimes forbid the last.

It has been frequently noticed, that the same air does not long agree with consumptive habits, and Dr. Moseley informs us, that Montpellier is not remarkable for the health, beauty, or longevity of its native inhabitants; that those who come there for pulmonic complaints, receive benefit at first, but generally remain stationary afterwards. When this happens, he advises a removal from Montpellier to Avignon, to Aix, or to Marseilles, and to return after a short absence to Montpellier. From such little changes, and constant moving about, he says he has found the most salutary consequences.

To reap the benefits which change of climate or situation, combined with exercise on horseback, promises, there are many circumstances to be attended to as auxiliaries in the cure, but which it would be improper to mention here.

To the consumptive, for whom the preceding observations are principally intended, I advise an attentive perusal of Dr. Rush on Pulmonary Consumption.

Rickets and scrophula do not frequently occur, and though our climate is less favourable to long life than more northern temperate latitudes, children are generally born free from these diseases. Dr. Moseley says, "Hot climates are indeed very favourable to gestation and parturition. Difficult labours are not common, and children are generally born healthy and strong, and thrive more than they do in temperate climates for a few years, and are not subject to the rickets nor the scrophula."

The cholera infantum, so often fatal in the early months of summer in some other States, is much less frequent here. Dysenteries are not so prevalent, and, in general, do not manifest so much malignancy.*

* Since my residence in Savannah, I have met with cases of dysentery more frequently. During part of the last summer, it was particularly prevalent on some plantations among the negroes, and several fatal cases occurred. In the earlier warm months, the diarrhœa among infants was frequent and unusually fatal. It will not be altogether amiss to offer a remark in this place, on the importance and value of the Ben (a well known cultivated plant in Georgia), not only for the fine oil which the seeds yield

The Croup (*Cynanche Trachealis* of Cullen), or suffocatio stridula, occurs but seldom. I have not seen a case in five years.*

Does the ardent desire for pleasureable pursuits, and an aversion to intense thinking on serious subjects, both of which are characteristic of the inhabitants of warm climates, secure them from hypochondriac affections? They are less common, from the observations I have made, than in colder countries. England, from the effects of the chilliness and moisture of the climate upon the nervous and muscular systems, produces a great number of hypochondriacs; and the gloomy month of November is remarked for the frequent commission of suicide.

Were I to draw a comparison of the healthiness of our climate with that of the northern and eastern part of the Union, I should say, we are less subject to chronic complaints, particularly of the lungs,† and to diseases of the mind. Pleurisies, peripneumonies, and hæmoptoe are less common; but intermittents and remittents, both nervous and bilious, are more frequent, and constitute the largest class of our diseases. On this subject of the comparative duration of life, and the average number of deaths and births, more extensive and minute observations by different persons, and in different parts of the State, must be made before an accurate estimate can be formed. ‡

upon expression, but for the mucilage which the leaves give forth by simple maceration in water. As a drink in dysentery, it is perhaps preferable to the white decoction, mucilage of gum arabic, or barley water; and has the advantage of being made without trouble.

* The *Cynanche Tonsillaris* is much the most common species which is met with, but it is seldom fatal.

† A calculation has been made, that in New-England, of one thousand persons who die, one hundred and ninety-one are of consumptions and other complaints of the breast.

‡ I have elsewhere remarked, that fevers of different types and grades comprise much the largest portion of our diseases. From repeated observations I am enabled to say, the tertian type is the most usual, except in the sickly months. They then become quotidian, and quickly run into the remittent form. In the latter fall and winter months, the quartan ague is not unusual; is generally obstinate in the cure, and very commonly lays the foundation of dropsy. From the concurrence of several causes, intermittent and remittent fevers are more prevalent in the upper parts of this State than they were several years ago; but having noticed this circumstance in another paper which I propose laying before this society, I forbear any farther remarks at present. Want of materials does not enable me, at this time, to furnish any satisfactory information on births, deaths, and the number of persons who reach an extreme old age. This is a very

Among an equal number of inhabitants, fewer, I believe, arrive at an advanced age than in the Eastern States; and though it is admitted that this is in a great measure owing to climate, other things are to be taken into consideration. It has been justly observed by Dr. Moseley, that, "diseases of climate must ever remain; but there is no climate in which some diseases are not acquired that might be avoided;" and it will be truth to assert, that much may be done towards the preservation of health in this State, by prudent persons, who avoid the exciting causes of diseases, who are temperate in their living, and who acquire a correct knowledge of their own constitutions.

Hot climates have always been censured for their sickness; but in passing this censure, the manners, customs, and habits of the people ought to come in for a share. "The mode of preventing diseases in warm climates," says Moseley, "is founded on the same principles as the mode of preventing them in every other;" and if we except the poorer class of the inhabitants, the means are within the reach of every one.*

essential part of medical history, and a collection of facts on these subjects forms one of the most prominent duties of the different members of this society. So far as it respects Savannah, the task will not be difficult. A reference to the symptoms, in books which are now kept under the direction of the Board of Health, with the joint efforts of the members of the faculty, would soon comprise a mass of information from which valuable deductions might be drawn.

* The too common opinion, not only with the natives of our State, but with foreigners, that the free use of ardent and vinous spirits is indispensable to preserve the healthy state of the body, is fraught with the most mischievous consequences. This idea, with the equally absurd one of "living well," to use the common phrase, proves the death of hundreds I may say annually. This is a copious theme. I have in another place offered a few remarks on it. Abstemious living, or, in other words, *strict temperance*, is one of the primary sources from which to insure good health. In the inhabitants of hot climates, it has some strong opponents to combat with, and amidst the force and contrariety of passions, reason sometimes loses her sway. When speaking of temperance, I do not mean *merely* to confine it to eating and drinking: It is equally necessary to observe it with regard to exercise. The mode of taking it, and the choice of time, are objects of great importance. The pernicious influence of the sun on newcomers is so well known, that it is now almost useless to offer any cautionary hints respecting it. Yet, from the temerity which is witnessed every summer, especially in young men, unused to our climate, and the sorrowful events which so frequently succeed, it would appear that the useful lessons taught by dire experience are unheeded and soon forgotten. I dare assert it as a fact, that the climate of Georgia is not so unfavourable for the preservation of good health, as is generally believed in other places, if we except *certain* parts of it. There are endemic diseases, and these, perhaps,

Indolence is a peculiar trait in the character of the people of warm climates. This is one cause of disease. The circulation of the blood cannot go on with regularity, nor can the different secretory organs perform their functions without a due proportion of exercise. Bodily strength cannot be supported without it, but excess of it will not be less injurious than a deficiency.*

The incentives to pleasure being more numerous, and the passions more strong and conflicting, the frigid rules of temperance are, in consequence, less heeded; and hence, diseases must follow.

I have long ago asserted, and I shall be forgiven by the candid and liberal when I again say, that the devotees to Bacchus are comparatively more numerous among the inhabitants of

must ever remain; but when I say that individuals, and even those who are strangers, have it very much in their power to ward off disease, I speak the language of truth and experience. It would carry me too far to enter into a detail of all the prophylactics of disease, and, speaking to a medical body, it becomes less needful. Let it suffice to observe, that all those means which have a tendency to preserve the healthy action of the solids without excessively *stimulating* them, and to *lessen* rather than increase the volume of blood; together with keeping the system quiet and cool; should be rigidly adhered to, until it has acquired that *certain* state which more effectually enables it to resist the attacks of disease. By *good management*, the grand object of a *seasoning* will be attained without risk, and the danger of subsequent attacks diminished in a direct ratio with the duration of residence.

* In attaching indolence to the character of the inhabitants of our State, I do not mean that it belongs more to them than to those of a sister State, and of all warm countries; but that this habit is strongly rooted daily observation evinces, and many writers corroborate the opinion. Nor is the remark made in an opprobrious view. Certain physical causes (particularly the relaxing effects of our long summers upon the system) conspire, perhaps with equal force, with *certain moral* ones, to prevent that spirit of industry which is beheld in the more hardy sons of the New-England and Northern States. It is, however, to the influence, in the greatest degree, of the moral causes, to which I would attribute the indolent habit. These begin their operation at the earliest period of youth; the force of example is constantly presented to their eyes; and the impression, from being thus early made, is more durable, and acquires strength with its duration. I need not be more explicit. Perhaps the ill is not to be radically cured from the peculiar nature of the two principal causes, but it is not totally irremediable. To moralists and divines I refer this subject, important in several points of view. Let them, in the most energetic language, impress on the minds of the youth of both sexes, the numerous advantages, moral and physical, which result from steady habits of industry. Let them address parents and guardians on this interesting subject; point out to them the evil both to individuals and society, which is effected when they permit children to grow up in indolence, without the acquirement of any useful art or occupation; and let them place, in detail, the numerous advantages which result from an opposite plan of education.

the southern States than with those of the northern. Those who sacrifice at his shrine must expect to atone for their folly by a melancholy train of evils; and it is a sorrowful consideration, that they are too often entailed on their offspring. To this source, many diseases, independent of its pernicious influence on the moral faculty, must be attributed. Temperance is the great source of health: joined with exercise it is one of the most effectual preservatives of that inestimable blessing. How absurd, then, for the gratification of sensualities, to entail misery on ourselves! This kind of regimen has a peculiar advantage over every other, that it is within the power of any one, whatever may be his rank or condition. It may be practised at all seasons, and in all places. An habitual course of exercise and temperance would greatly tend to diminish the overgrown bills of mortality, which are a sad proof of the degeneracy of the age, and of the evils which await a life of indolence and luxury. The effects of temperance are well exemplified in the allegory of "the infallible Elixir;" and using the words of Æsculapius to the luxurious Crenes, I would say to every reader, Would you be happy, be temperate: temperance is the parent of health, virtue, wisdom, plenty, and every thing that can make you happy in this or the world to come.

By intemperance I do not here mean a mere restraint of passions and appetites within the bounds prescribed by reason; but a strict observance of the various things relating to drink, diet, exercise, rest, diversions, &c. &c. and upon the due apportionment of which greatly depends the preservation of health, and the prolongation of life. Well has the poet said,

" 'Tis to thy rules, O temperance! that we owe
All pleasures which from health or strength can flow;
Vigour of body, purity of mind,
Unclouded reason, sentiment refin'd."

Annexed is a list of medical cases, which, with the preceding observations, will enable the reader to form a tolerable idea of our most prevalent diseases.

List of Medical Cases for one Year, commencing Jan. 1, 1801.

Icterus	1	Paraphrenitis	1
Cachexia	1	Odontalgia	11
Acidity	1	Hemiplegia	1
Pleuritis	2	Cancer	1
VOE. IV.		R	

Fevers of various types, continued, simple bilious remittent, and different forms of intermittents*	62	Dropsy	1
Inflamed breast	1	Acute Rheumatism	1
Psora	2	Hæmatemesis	1
Cephalalgia	3	Herpes	2
Cynanche, different species	4	Synocha	3
Epistaxis	1	Urticaria	1
Dyspepsia	1	Abortion	1
Gonorrhœa	3	Puerperal Fever	1
Sarcocele	1	Dentition	1
Diarrhœa	7	Catarrh	3
Chronic Rheumatism	3	Epilepsy	1
Indurated Parotid	2	Amenorrhœa	1
Ulcerated Mouth	1	Cough	2
Relaxation of the Uvula	1	Cirsocele	1
Lues Venerea	2	Asthma	1
Colic	4	Dysentery	2
Strangury	1	Cholera Infantum	1
Vomiting	1	Phlegmon	3
Hemorrhage from the gum	1	Vertigo	1
Ophthalmia	4	Convulsio	1
Anomalous	4	Ischuria	1
Hysteritis	1	Prolapsus Ani	1
		Scurvy	1
		Paronychia	1
		Enteritis	1

*A LETTER, containing REMARKS concerning GENERATION;
addressed to Dr. MILLER, by THOMAS EWELL, M. D.
and one of the Surgeons of the United States Navy.*

UNDER the impression that men of good sense possess sufficient liberality to look over the errors contained in the efforts of those who desire to make useful discoveries, I cannot long hesitate in offering for publication such observations as appear of the least consequence. Not now meaning to devote any time to telling the trite tales about epidemics, or to give fashionable descriptions of common fevers; subjects with which every one must surely become acquainted by his own observation; I shall venture to suggest something concerning a process which has excited much attention among the curious, and great interest among all mankind. It relates to generation.

It would be useless to extract from the common-place books on physiology, an abridgment of the various theories which have been promulgated to account for the successful

* Twenty-nine were of the Quotidian type.

or fruitful connection between the two sexes. I shall only state, with an eminent French character, that I believe the little embryo is a kind of neutral substance, a *tertium quid*, formed by the union of the male and female seminal fluids. Be this correct or not, it will not affect what I am to offer.

That animals breathe after they are introduced into atmospheric air, and that they die if withheld from it, was early known. But it is only of late that chemists have ascertained, that it is through the medium of a substance contained in the air, called oxygen, that life is supported. Hitherto it has been taught, that the presence of oxygen gas was only necessary for the existence of animals after they began to breathe; to me it appears indispensably necessary previous to respiration. After making several experiments, and after reflecting on the subject, I am convinced that the presence of pure, vital, or oxygen gas, is necessary to give the first animation to the embryo formed in the uterus; that it is only after this union with a little oxygen, that the embryo is enabled to receive more oxygen and nutrition from the mother; and that consequently coition will always be unfruitful unless it be done in pure air, so that some oxygen gas may be protruded before the penis into the uterus; for which purpose the termination of the penis seems properly adapted. The reasons leading to this will be briefly stated.

That the male semen, when emitted and exposed to the air, becomes fluid, is well known. Its fluidity appears to arise from its union with oxygen gas, from the following experiments, which, with others that will be afterwards related, were accurately performed by a friend of mine at my instance, whose name, at his request, must be withheld. A large healthy young man, while in the warm bath, emitted a considerable quantity of seed, which he retained in an inverted tumbler with the warm water that was prepared for the purpose. This seed, instead of growing fluid, actually became unusually mucilaginous and thick, and so long as retained in the water showed no symptoms of a tendency to fluidity. A quantity of seed emitted by the same young man at another time was divided, and one portion put in a small glass, containing oxygen, and the other in one containing common air; that with oxygen first dissolved. By chemical tests it was ascertained (though from the imperfection of the apparatus, not very accurately) that a quantity of the oxygen had been absorbed by the seed, for the gas had disappeared. From this then it appeared, that the male seed was

capable of uniting to oxygen. The following experiments were then made, which show the agency of oxygen in fruitful copulation. As the adherence of the male to the female frog is so remarkably strong, that in that state they may be freely handled without separating them, and as the rudiments of the tad-pole are contained in a kind of filament extricated from the female, on which the male deposits his seed, which vivifies them, as shown by the indefatigable and curious Spallanzani, these animals were selected for experimenting with. Two of them engaged in copulation were taken, and held in vessels containing pure distilled water, one impregnated with azotic gas, another with carbonic acid gas, a third with atmospheric air, and a fourth with oxygen gas. In each of these, the frogs deposited their filament, which was carefully attended to for several days, when it was found that only the filaments in the vessels containing oxygen and atmospheric air had the least appearance of tad-pole.

The famous experiment of Spallanzani, from which we learn, that by collecting the seed of dogs in syringes, and injecting it into bitches, he could form puppies, appears no longer surprising. The exposure to atmospheric air which favoured the absorption of oxygen, must render the seed more prolific. Perhaps the seed of some animals may be made, by exposure to oxygen gas, wonderfully fruitful.

Should the doctrine of generation which is now very generally supported be correct, which is, that the female is impregnated by the *absorption* of the male seed, the direct agency of oxygen will appear equally clear. By rendering the seed more fluid, the facility with which the absorption takes place must be increased by oxygen.

There are a few facts concerning the propagation of the human species, which tend to favour the idea concerning the presence of vital air supposed to be necessary. Most of the children are born before midnight, when no disease has disturbed the mother, as has been often noticed. The chances of successful copulation must naturally be greatest in the first of the night, as the air of beds before morning is well known to become so foul as to extinguish burning tapers when introduced. The astonishing number of births to the south, among the negroes, appears to depend in a great measure upon their copulating in the day, exposed to the sun, on the sides of hills, where the air is uncommonly pure. Their superintendants or overseers generally cohabit with the negro women under similar circumstances, and with such success,

that but few women of the farms fail having white children by them.

If the above doctrine be correct, there is no doubt but that one of the causes of the barrenness of some married people may be, their not taking proper pains to guard against the presence of impure airs. Possibly the fruitfulness of some may be increased by a connection in a tub of oxygen gas. If there be a situation in which having children would be distressing in the extreme, a remedy or corrective for fruitful nature might be found by embracing only in vessels filled with carbonic acid or azotic gas. May not the failure in the prolific powers of some women arise in consequence of a diseased state of their secretions in the vagina, by which all the oxygen is absorbed before the union of the seed of the two? Would not a remedy be obtained by injections, which either alter the state of the secretory glands, or act as a new sheath to the parts, without uniting to the oxygen?

This is a subject curious, interesting, and, I really think, important. Much light is to be thrown upon it, before the physiologists can be satisfied. I hope others will attend to it, and treat it successfully. The investigation might be promoted if individuals would publish their experience. Many often tell of exploits less natural, less interesting, and less important.

REMARKABLE FACTS *on the Continuance of HUMAN FLESH, in some Cases, without PUTREFACTION: In a Communication to Dr. MITCHILL, from the Rev. DAVID WILEY, dated George-Town, District of Columbia, July 25, 1805.*

IN different parts of the Eastern Continent, human skeletons have been found, with the skin entire, and the organization of the bones unbroken, long after all moisture has been exhaled, by the operation of some natural cause. Something of this kind has been discovered on the west branch of the Susquehannah, near the Great-Island, in Lycoming county, Pennsylvania. About the beginning of last August, a boy, in pursuit of some kind of small game, broke into a depository of the dead, formed in a rock on the top of a mountain, in which were found the remains of several Indian skeletons. At this time I was on a visit to that part of the country, having formerly resided in it; but I was not informed of the discovery till the very evening before it was necessary for

me to commence my return to George-Town. I was then at Bellefont, in Centre county. I received the information from the Rev. Isaac Grier, who lives within a few miles of the place, and who engaged to visit it on his return home, and promised, if he found any thing worthy of notice, to send it on to me, with an account of the principal circumstances. Under date of the 2d of November, 1804, I received a letter from him, of which the following is an extract.

“ It was not till last Saturday that I visited the Indian skeletons, in company with Dr. Hey, lately from Bristol, in England. They lie almost on the summit of a mountain, about a mile from the Great-Island. The front of the rock under which they are laid is about three feet high. The upper part of it is sufficiently solid to carry off the rain. Below, it is full of veins, many of them running in an upright direction, and pretty open, so that the parts of the rock can be separated without much difficulty. Some earth being previously removed from the lower side of the rock, cavities have been formed in it, of different sizes. There are three of these; the smallest, about three feet in length, runs almost directly into the rock, and is irregular, owing no doubt to the difficulty of breaking it. In this only a few small bones were found. Toward the other end of the rock, and about eight or ten feet distant, is another cavity, about six feet in length, in which only a large bone or two were found. The middle one is more regularly formed than the others, and is about four feet long. In this appears to be the body of a young female not more than ten or eleven years old. The flesh, and likewise the skin, is decayed from the body and thighs. The head retains a good part of the skin, and some hair is yet visible on the top of it. The legs and feet only have the skin entire, but without flesh. The skin is perfectly dry and hard. Two mokisons are on each foot. In one of the mokisons are two pieces of what is called *taste* (silk ribbon) sufficient to tie the mokison. The foot is well shaped and handsome, and appears to have been much used in proportion to its size. The nails are all fast on the toes, and the sinews are as visible as in a living foot which has but little flesh. There is a considerable bundle of red clothes lying with the bones, and some beads are wrought into them.

“ The body of this child appears to have been laid on bark, and then covered over with boards split, and afterwards a little hewed: the other cavities were not covered.

The rock and boards completely sheltered this from the rain. Stones were laid up at the front to conceal it in such a manner that no one would suspect it contained anything. It is probable that some family of the natives had designed it as a separate place for their dead."

Mr. Grier also informed me, that they had brought away a leg and foot with its mokisons, and that he would send it on to me if I wished it. I immediately wrote to him to endeavour to procure the whole skeleton with all that was found with it; but all he had left had been taken away by a Dr. Harrison of that neighbourhood. I likewise requested him to give me further information relative to the situation of the place, the nature of the soil, and of the rock, and the time since the Indians left that part of the country. The following are extracts from his answers.

"The mountain is about fifty perches high, the ascent abrupt. It is often necessary to take hold of the trees and bushes to assist in ascending and descending. The soil on the mountain is thin, mixed with small black slate stones. The timber is small pitch pine, with oaks of different kinds, all of a small growth and thinly scattered. The rock, which presents a perpendicular front as you ascend the mountain, is not more than four feet at the highest place, runs from north-east to south-west, and is about three or four perches in length. The north-east end of it is the summit of the mountain. It is covered with soil on the back part, and not more than a foot or eighteen inches is seen on the top. It is exposed to the scorching heat of the sun from noon till it disappears behind the distant mountains.

"William Dunn came to the island in 1769. A number of Indian families were then living on the bank, now called Dunnstown. This was probably not more than a year or two after General Armstrong had driven them from that place. In 1773, 'Squire Flemming and Read's families came to the old town. A few Indians continued generally in the neighbourhood till the war broke out.

"Mr. Thomas Read, who lives near the place, informed me that the skeletons, when found, appeared to have been covered with leaves that had been pulled when green. He did not examine what kind of leaves. I wished to have got a small half-pint kettle that was found with the body, but the people who had it moved up the river. I shall send you a few trinkets which one of the Miss Read's found with the body, an instrument for calling turkies, and ornaments for the nose

and ears. These, with one of the legs, a small piece of the rock, and as much of the clothes as may be convenient, will be forwarded according to your directions."

They, however, did not arrive at this place until the 4th instant. The leg and foot are more perfect than I expected to see them. The skin has a few small breaches in it, something like moth-holes in a woollen garment; but through these we perceive the remains of the muscular fibres of the leg; and this is the reason why it, in a great measure, retains its shape. A small incision has been made with a knife through the skin, on the upper part of the foot, in order to examine one of the tendons. It is in the most perfect preservation; the bones of the leg are in their natural position, and quite sound. The heads of them are visible, as they have separated from the knee joint. The skin of the whole knee, and part of the thigh, remains attached to the leg. The patella, or cap of the knee, adheres to this skin in its proper place, but no other bone of the knee. The skin of the knee and thigh becomes soft and pliable by moisture. The pieces of red cloth found with the body are evidently the remains of an Indian dress; beads are wrought into them, and they are laced, and, as it were, barred with broad yellow tape. There is one small piece of blue cloth. The other articles of dress are part of a linen shirt, and a woollen frock of a dirty white colour, so entire that it might yet be worn; all the articles of clothing appear to be more or less injured by lying with the body; but most of what remains is quite sound and strong. How long it might have been since the body was laid in this place, it is not easy to say. The clothing shows that it must have been since the settlement of the Europeans in this country; and the facts stated above prove it to have been at least twenty-five or thirty years back from this time; this, however, is immaterial. Every one who sees the articles in my possession must be convinced that very little care is necessary to preserve them for ages in their present state. How they came to be in this state, especially the leg and foot, is a matter of more importance. Yet this, perhaps, is not so difficult as might be supposed. The rock appears to be considerably porous, and well adapted to the absorption of moisture. It is in a dry situation, exposed to the heat of the sun in the warmest part of the day, and only those parts of the body that have least moisture are preserved. The hot dry atmosphere, and the parched sands of the African desert, are said to have a similar effect on animal bodies, and

similar preservations are found in tombs, formed in porous rocks on the Canary islands. But I leave it to you to make your own reflections on the subject, if you think it worth your attention. To have an opportunity of showing you, when you return to Congress, that part of the skeleton and clothing which I have procured, would be highly gratifying.

An ACCOUNT of the WEATHER and DISEASES in the County of Cumberland, District of Maine, from January, 1804, to January, 1805: Communicated in a Letter from JEREMIAH BARKER, M. D. of Portland, to Dr. MITCHILL.

IN January and February, 1804, the weather was unusually variable; the thermometer ranged from 36 to 0.* Ten snows fell in these months, and four rains. The depth of snow in February was supposed to average about four feet.

In March the thermometer ranged from 30 to 40°; in April, from 35 to 50°, and in May from 45 to 70°. Considerable rain fell during these months.

In June the thermometer ranged from 60 to 80°. There were eight rains in this month, with some lightning and thunder. Vegetation was very rapid.

In July the thermometer ranged from 65 to 80°. It rained on the 2d, 7th, and 22d. The rest of the month was clear and calm.

In August the weather was dry and sultry. The mornings were often foggy, and the grain was much damaged by mildew and rust. Only one rain fell during this month, which was on the 8th. The thermometer ranged from 70 to 80° most of the time; prevailing wind, south-west.

In September the thermometer ranged from 80 to 50°. Four rains fell.

October was moderate and clear till the 9th; temperature about 50°. At this time the mercury fell to 40°, when a violent north-east rain-storm began, and continued to increase for twenty-four hours, with excessively high wind, and some thunder. The remainder of the month was temperate till the 30th, when the mercury fell to 25°.

November was moderate and pleasant; temperature about 40°.

* In the winter months the thermometer was noted at eight A. M. in the rest of the months at two P. M.

In December the mercury ranged from 30 to 20°, till the 14th, when it fell to 0. After this it ranged from 10 to 36° to the end of the month. During this period several snows fell, which were followed with rain.

In January and February the scarlatina, croup, and mumps appeared, in scattered instances, upon the sea coast.

In the spring months several cases of low slow fevers occurred, in most instances attended with a cough.

The months of June and July were healthy.

From the beginning of August to the middle of October, a considerable number of cases of fever occurred in several towns upon the sea coast, particularly in Portland, Falmouth, and Cape-Elizabeth, while the inland towns, in general, were healthy.

The subjects of this fever, so far as my observations extended, were those who laboured in the heat of the sun, indulged freely in fresh meats, and were lodged in close unventilated apartments, or exposed to noxious exhalations from other sources.

The disease occurred with various degrees of violence, from a highly malignant form to a mild remittent. Cases of the former grade, for the most part, terminated favourably or unfavourably in less than a week. Instances, however, of this kind did not occur more frequently in Portland than in some remote parts of the other towns several miles from navigation.

The fever was often subdued in a short time, when powerful means were seasonably employed.

On the evening of the 18th of August I was called to three patients, ship-carpenters, in one family, who were seized early in the morning with the usual symptoms of fever, as want of appetite, stomach-sickness, pain in the head, &c. The first patient whose case I examined, complained at this time of great oppression at the præcordia, universal heat, increased pain in the head, and intense thirst; pulse hard and full. After drawing a pint of blood, I gave four grains of tart. emet. with thirty grains of sal sodæ, which produced eight ejections, and each was followed with an aqueous solution of the alkaline salt. Soon after it operated once as a cathartic. He had a comfortable night, and the next day was pretty free from fever. He recovered without any return of the symptoms.

The second patient complained of great heat and anguish at the stomach, and had vomited several times; yet his com-

plaints were not alleviated; pulse quick and weak. I gave three grains of tart. emet. with soda as above, which produced five plentiful ejections. His complaints were then in great measure removed. The next day he was able to walk abroad, and had a natural stool.

The third patient complained of great pain in his head, anguish at the stomach, and faintness; pulse low and oppressed. A pint of blood was then drawn, when his pulse rose and his faintness was removed. An alkaline emetic and cathartic were then given, and he soon recovered.

Several others were attacked in a very similar manner, where medical aid was not sought for till the second or third day, when the poisonous cause had produced such ravages in the stomach, and such a derangement of its band of associates, that it often required a week or more to rescue the patient from impending danger; and then it was sometimes impracticable, though great success attended the use of alkalines and oils, after proper evacuations, together with the conjunct aid of calomel and blisters, in many of these neglected cases, which appeared to be hopeless.

In September and October the fever continued to prevail with great diversity of symptoms. In some the disease was ushered in with *gastrodynia*. Cases of this description were called by the patient *bilious colic*; so that medical aid was readily employed, and an alkaline emetic frequently removed the disease; though sometimes there was such an obstinate costiveness, that calomel and jalap, as well as enemas, were necessarily conjoined. In others the fever appeared in the form of a mild remittent, with little or no pain in the head or back, after the first evacuations, and the patient was able to sit up the greater part of the day. Under these circumstances the patient frequently lingered two or three weeks, unless seasonable means were employed. Indeed, the disease answered so nearly to the description of the remittent fever given by Dr. John Hunter, in his observations on the diseases of the army in Jamaica, that we believed it to be of the same nature, and to depend upon similar causes; but no one imagined the fever to have originated from that island, or any other foreign part.

The middle of September I attended five patients in fever, who resided near a slaughter-house, which was very offensive to the smell. Their symptoms were formidable and alarming; three required bleeding. In these cases, alkalines were productive of such happy effects that their repu-

tation was greatly enhanced. By depositing quick-lime in the sick rooms, and by fumigation with volatile alkali, the air in the rooms was rendered pure; and, by a liberal use of alkaline salts, the contents of the alimentary canal were prevented from becoming putrid, so that nurses and visitors were not infected. They all recovered.

On the 19th, a girl, in a country village, aged sixteen years, of a good habit, complained of loss of appetite, sickness at the stomach, and pain in the head. On the 20th a low delirium came on, and she was very thirsty. On the morning of the 21st her skin acquired a purple colour. At this time I was called, and arrived at eleven o'clock A. M. when she was speechless, and her pulse could scarcely be felt. The abdomen was tense and sore to the touch. No means had been employed excepting water. I gave three grains of tart. emet. which, in twenty minutes, operated as a cathartic. Spirituous stimulants were then employed both externally and internally, but they produced no sensible effect. She expired at noon.

I found two others sick of fever in the family, who were seized in a similar manner on the 20th. They both recovered in one week by the usual remedies.

These patients were lodged in a small hut, on low ground, near a fresh river, and the family consisted of seven in number.

Soon after I attended a woman in puerperal fever, whose eyes and skin were of a deep yellow hue. The fever was subdued in one week, by the use of evacuants, alkalines, and blisters. The yellowness of her skin, however, did not wholly disappear under three weeks. She resided six miles in the country.

In November and December the scarlatina anginosa prevailed in several towns upon the sea coast. It commenced its ravages in the western part of the county, and progressed eastward, while most of the inland towns escaped.

I attended a considerable number of patients in this distemper, which, in most instances, assumed a great degree of malignancy. Its character and treatment will be particularly described in a future account of medical occurrences.

FACTS concerning GOITRE, as it occurs in the Towns of Camden, Sandgate, and Chester, within the States of New-York and Vermont; and Conjectures concerning its Cause: In a Letter from Dr. JONATHAN DORR, of Cambridge (State of New-York), to Dr. MILLER, dated Cambridge, March 3, 1806.

I HERE make communications of Camden, in the State of New-York, situated in the south-east of Washington County; of Sandgate, situated east of Camden, and adjoining, but in Vermont; and of the town of Chester, situated on the east side of the Green Mountains, in Vermont. Camden and Sandgate are very mountainous; the mountains lofty, with sharp ascents, and quite broken faces, together with a rich soil, and a heavy covering of beech, maple, birch, and some hemlock on their acclivities; on their summits, oak, thickly interspersed with the other timber that makes up the forests. The water as pure as I ever saw, without the least appearance of any mineral that might impregnate it, with the exception of a small stream, at the head of which there appear amongst the chasms of the rocks from whence the water precipitates, green concretions, which the inhabitants call verdigris (*Ærugo*); but this in too trifling a quantity to affect the water; moreover, the inhabitants in this part of the town are more exempted from goitre than in any other part: the greatest number of the inhabitants of Camden live in a valley half a mile wide, which begins its opening on the south line, and west part of the town, from thence runs north-east three miles, then takes a short turn to the east, forming nearly a right angle, then, in the distance of three hundred rods, approximates Vermont line. The valley continues about two miles into Sandgate, then is interrupted by the convergency of the mountains which environ the valley from end to end. At this narrow place the road continues on, by frequent windings and turnings, as the margin of the mountains, for about one mile; it then falls into the valley of Sandgate, which runs north and south, and contains the greatest number of the inhabitants of Sandgate.

Three years ago Sandgate contained one thousand and twenty inhabitants; about one-fourth of the females were affected with goitre, and about an equal number in Camden. The inhabitants of Camden and Sandgate were generally healthy when they moved into the two towns.

The town of Chester, mentioned above, is a mountain-

ous place (but not as high mountains as its environs), and divides Sandgate and Camden. Timber and water the same, with the difference of lime-stone in small quantities in the former, but none in the latter. In Chester, I am informed one-half of the females were troubled with goitre. In the three towns there is hardly such a thing as a male being affected with goitre. There are heavy snows, with extreme cold weather, in Chester. In the other two towns the air is remarkably salubrious, and not liable, from their local situation, to any particular extreme. There is no material difference with respect to mountains, timber, air, stones, or water between the towns of Camden and Sandgate and the adjacent towns; nevertheless, it is quite a rare circumstance to find an inhabitant of the neighbouring towns with a tumefaction of the thyroid gland. Epidemical diseases have been similar in them all for twenty years last past. I have never known nor heard of any endemical disease in either; there are no circumstances indicating marsh effluvia, except the heavy foliage which falls in the autumn, and that putrefying might emit miasmata; which, in fog, might fall in the vallies and affect the inhabitants; but this cannot be the case, as there are no endemical complaints in the towns, neither was there ever known an instance of an inhabitant having a regular intermitting fever in Camden or Sandgate, which could not be traced to some other place for its origin.* I am acquainted with Hebron, Whitehall, and Argyle, and several other places where intermitting fevers were as general and destructive as in any part of the world I have ever heard of. The large sunken swamps, the heavy masses of stagnated waters and putrefying vegetables, which left no doubt of the remote cause of the disease; but the inhabitants of these places, though afflicted with this malady for five and twenty years, are no more troubled with bronchocele than their neighbours who are exempted from intermittents.

You will make the same conclusions from these collected facts as myself; to wit, that all the weight contained in them preponderates against the suggestion, that goitre has to lurk near putrid marshes for its remote cause. I have heard politicians lay it down as a maxim, that no system of government should be destroyed until a better one was proposed in its stead. Applying this principle to myself, I might here be

* I had this information from the physicians of the towns, perfectly agreeing with my own knowledge of the facts.

compelled to lay down my pen, it being my design not to erect a fabric, but to collect materials for a more finished workman. I shall prosecute my object, by offering a few suggestions which have occurred to me from observation. First, I take it for granted, that the lips, throat, mammæ, and genitals, very readily associate together, and that any or all of these parts being exposed to cold to a certain extent, under peculiar circumstances, will be followed by different diseases. One suggestion I mean to offer you is, whether goitre does not depend on exposure to cold for its remote cause? Whether women, who are compelled, by necessity, to be daily wading through snow in the winter season, to attend their domestic concerns, do not dangerously expose their genitals? and whether women, equally exposing their necks and breasts to the effects of cold, do not tend to call into sympathetic operation those parts, always disposed to sympathize with each other from some other causes? Thus, from extraordinary exposure of females to cold from their dress, together with the delicacy of their sex, pinching condition of the poor, and their having two more points to sympathise with the gland of the neck than men (I mean the mammæ), may we not account for the more frequent attacks on females than males, by calling into action the latent connection between the throat and breast, the genitals and throat? Those parts may be alternately exposed to cold, and produce an alternate and reciprocal operation on each other, until the glands and cellular substance about the neck and throat are torpid and paralyzed, by having their action frequently suspended by the too great extinction of heat, and by closely associating with other parts which are frequently exposed to cold. Glandular parts becoming torpid will soon tumefy.

One circumstance props the suggestion of cold being the remote cause of goitre, that is, since the inhabitants of the towns above mentioned have emerged from their indigence to opulence, there is not one twentieth part of new cases as formerly.

If the remote cause of goitre be the direct effect of cold on the glands of the neck,* and the remote sympathetic opera-

* By attending to the incipient state of bronchocele, it is evident the thyroid gland is not the first part affected in every case. The tumor will often make its first appearance on the lateral part of the neck higher than the sternum.

tion of cold on the genitals and breasts, aiding or assisting the direct effects of cold on the point of disease, it will be easy to establish the principal obstructions to the rise and progress of goitre, and to lay down some just conceptions of cure.

I have known several tumefied necks entirely relieved by applying rock-salt, sewed between soft flannel, frequently wetted with vinegar, and worn for six months over the tumor, and have judged the warm season most favourable for the cure.

As far as my knowledge has extended, the disease under consideration assails those persons who are exposed to the evils attendant on penury. It attacks persons living in mountainous countries and long-extended vallies. It is in these vallies there is a more constant current of air to render the effects of cold more injurious. It is in those mountainous countries the poor people settle, who have the fewest means of defence against the inclemency of the seasons. It is here the females have to perform much of that kind of labour, the more opulent women are exempted from. It is here girls and young married women, from a pernicious custom, go without their necks and a portion of their breasts being covered through much of the frosty season. The women's necks being exposed through the cold season to the effects of cold, the glands become torpid, then swell and produce goitre.

A formidable difficulty now presents itself against this theory; to wit, that the neighbouring towns, which enjoy all the blessing, and are exposed to all the evils of Camden and Sandgate, have but few cases of goitre. To obviate this difficulty I have to remark, that when a town is to be settled, it frequently happens the settlement is made by a certain chain of connections. If these connections are of that peculiar habit, which exposes them to the effect of the remote causes of disease, they will be suddenly hurried into bronchocele when exposed as above, whilst many other towns are settled by that hardy race who resist all remote causes of disease, which assail the more delicate with so much injury. How far these observations will apply generally, I dare not pretend to say; they apply to Camden and Sandgate pretty clearly. My information from the town of Chester is from Dr. Littlefield, who was a practitioner there for some years, and on whose correctness I can depend.

PRACTICAL REMARKS on the Similarity of American and Asiatic FEVERS; and on the Efficacy of BLACK HENBANE and WHITE VITRIOL in curing INTERMITTING FEVERS and DYSENTERIES: In a Letter from S. FFIRTH, M.D. to Dr. MITCHILL, dated Calcutta, Oct. 13, 1805.

IT is my intention, at some future day, to give a second edition of my experiments on black vomit, amended, enlarged, corrected and improved, which I hope, from my progress in science, and my attention to the diseases of Asia and Africa, (those parts thereof which I have visited, and others that, if I be spared health and life, I intend to visit) to be able to render more worthy the attention of an enlightened and generous community, particularly by showing its analogy to the malignant fevers of these last mentioned countries: for I am fully convinced that the disease is a unit, and the same in every part of the world where it prevails, only varied by greater or less force of the remote, predisposing, and exciting causes. Its appearance is varied in different countries from these causes and the difference of climates, customs, manners, diet, cloathing, &c. *but not much more so* than it is in different years, and in different parts of the United States. My opinion is confirmed, from daily observation and reading, of its being only a different and a lesser grade of the disease denominated by nosologists, *Pestis*. For what is the plague but a high grade of malignant fever? and what is the American malignant fever but a mild grade of the plague, produced by the same cause operating with more or less force, prevented by similar means, and cured by the same remedies, accommodated to the force of the disease and state of the system? *For "Nature acts not by partial but by general laws."*

In one of the periodical publications I lately met with some observations on the use of white vitriol in dysentery and intermittents. The authors speak in high terms of its use, and, as far as my experience goes, I think very justly.

The sulphate of zinc is a remedy which I have been in the habit of prescribing, in several diseases, as a tonic, and am of opinion, that when combined with a narcotic anodyne, it may be substituted very advantageously for the cinchona officinalis. I have often done this in practice, and was seldom disappointed in its good effects.

In remittent fevers it is a useful and valuable remedy,
VOL. IV. T

and can be given when the bark is inadmissible, especially if combined with the extract of *hyosciamus niger*. In this disease, as soon as the remission becomes perfectly distinct, the pulse quick, weak, and feeble, or irregular and frequent, the patient may take two grains of white vitriol, with one of the extract of *hyosc. nig.* every four hours, being careful to avoid drink for half an hour after taking the medicine. If the bowels be constipated, it will be proper to premise an enema; after which, in general, the remedy will keep them sufficiently open: as the patient becomes accustomed thereto, the dose must be increased; where debility is very great, it must be given at shorter intervals. In the remittent form of the malignant fever of Asia, I have given to the extent of three grains of the *hyosciamus niger*, and four of *vitriolum album* made into a pill, and swallowed every hour and an half, but only in cases where the danger was great, and after beginning with a smaller dose: ordinary cases will generally require two grains every three hours on the fourth or fifth day from commencing the remedy, as patients soon become accustomed to it, and smaller doses cease to produce a prompt effect. It must, however, be remembered, that these patients were all robust seamen, accustomed to large quantities of stimuli, and requiring more powerful remedies than other persons; and that in India, where the excitability is worn down or exhausted, larger doses are requisite to produce an effect than in the northern latitudes, (say from three, four, to five grains) and the people, in general, are more accustomed to the use of powerful stimuli, as food and condiment; consequently more difficult to make an impression on by medicine.

I have cured several cases of remittents, by prescribing, as soon as called, an enema, made of a strong infusion of tobacco, and repeated in four hours; an emetic of *ipecacuanha*, with one grain of the antimoniated tartrate of pot-ash, assisted by plentiful dilution, which induced emesis and catharsis; a remission soon succeeded. I then gave the pills of *extr. hyosc. nig. et sulph. zinc.* which supporting the excitement, prevented an accession of disease; and the patients were discharged cured in a very few days.

I have combined opium with the vitriol in several cases, but prefer the *hyosc. nig.* as it keeps the bowels regular, proving gently cathartic; whereas, when the former is used, it often produces constipation. This gives it an advantage in simple diarrhœa, but frequently renders it inadmissible in

remittents and dysenteries, except where the latter has become chronic and degenerated into a lientery.

Where remittents have turned to intermittents, as frequently occurs in Java, the vitriol. alb. and hyosc. seldom fail of effecting a cure, except when hepatitis is combined. In such cases, the nitric acid I consider the most efficacious remedy. Mercury I have also in these cases used with success. When this is not the case, I prefer the pills, in many instances, to the cinchona officinalis: they appear to prevent, and frequently cure when it has taken place, the enlargement of the spleen, so frequent after the intermittents of this island. It is requisite to premise an emetic in most cases of intermittents of hot climates, before we begin the use of tonics, and it is a good practice to add a few grains of calomel to it, to assist in carrying off any superabundance of bile that may have accumulated.

In the second stage of dysentery, though the pills of vit. alb. et hyosc. nig. are useful, though I think *they ought not to be used* while the *tormina* of the intestines, or a discharge of *blood remains*; but after this has ceased, we know the disease is frequently kept up by debility of the parts and habit. In such cases, by acting as a tonic, &c. as well as by breaking the association, they cure the disease. When nausea and vomiting are produced, the dose must be diminished. I have not, however, found any bad effects from a slight emesis being induced, and thereby, on the contrary, it has, in several cases, been apparently advantageous.

This remedy I consider particularly adapted to the diseases occurring amongst seamen in ships, in East-India or African voyages. Bark is objectionable on account of its price, and the room it takes up in the medicine chest; whereas this is a cheap remedy, and one that occupies little space. I conversed some time since with a gentleman, who had been surgeon of a Guinea slave-ship. In the course of conversation he informed me, that he found the vit. alb. with opium, very useful in a typhus fever that prevailed on board his ship during her passage from Cape-coast Castle to Jamaica; he thought it not inferior to the bark. I have found the remedy equally useful here, as in Batavia, Ballambouary, and the Cape of Good Hope. I formerly used it with success in a number of cases of intermittent fever in Pennsylvania; when I resided at the Philadelphia Dispensary, I had frequently an opportunity of comparing its virtues in the cure of intermittent fevers, with bark and arsenic: the result of

my experience was, that in many cases it cured where the bark had failed; but I found likewise that the bark succeeded in as many cases where the vit. alb. had disappointed me; it was the same with arsenic. In these cases it was generally combined, either with opium, or the extract of hyosciamus, which, no doubt, improved the medicine considerably.

You, Sir, who are so well acquainted with the operation of medicines upon the human body, know that after some time the system accommodates itself to the action of certain medicines, when they cease to produce a good effect. In such a case, a weaker remedy will produce more powerful effects. By changing our remedies occasionally, or varying our modes of attack in curing a disease, we frequently derive the greatest advantage: hence, where the bark has failed, I would use the sulphate of zinc, &c. when that has not succeeded, I would try the arsenic: if this failed, I would prescribe a gentle ptyalism, and afterwards recur to the use of bark again. By thus varying the remedies, as the system becomes accustomed to their action, we are enabled to cure diseases which otherwise would baffle our art.

It may not be improper to observe, that I have seen salivation produced by the pills, but I believe it was the hyosciamus alone that induced ptyalism, as I never saw it take place when the vit. alb. alone was used; whereas, in prior cases, in which the hyosciamus was used without addition a copious salivation came on, attended by a peculiar fœtor not unlike that induced by mercury.

A DESCRIPTION of the REGION in North-Carolina where GOLD has been found. By Dr. STEPHEN AYRES: In a Communication to Dr. MITCHILL, dated Cabarrus County, North-Carolina, Aug. 16, 1805.

BY this time, no doubt, you are anxious to know what progress I have made in my travels. I will give you a small sketch. I passed through the middle tract of Virginia, by *Monticello*, which is part of the same ridge that is called Newark Mountain, in New-Jersey, or, in proper language, *the Great Basaltic Mountain of the United States*. The President's mansion is elegantly furnished with portraits and busts of men who have immortalized their names by their virtuous and heroic conduct, in settling and fighting

in this country; by their transactions in a political capacity, and by their writings and discoveries in philosophy. I arrived in this State the 5th of February; passed through Guildford, where General Greene and Lord Cornwallis gave remarkable proofs of their respective prowess and skill in commanding. The battle commenced three or four miles from this, on the road to Salisbury, which had then, as well as now, woods on each side. I observed many trees that then had their tops shot off still standing, with bushy tops, (the fallen ones not quite decayed, and apparently in the same position as they fell), as lasting monuments of the terrible execution done by artillery on that day. When the two armies had arrived, by means of this *road-fight*, to some fields near Guildford, they formed on each side of a small brook, on gently rising grounds, where the battle was carried on with obstinacy and regularity until night, when General Greene marched to a creek, called Reedy-fork, two or three miles north-east of Guildford, which he crossed, &c. as history more correctly informs you.

After some little delay I reached Salisbury, whence I proceeded to inquire for *Reed's Gold Mine*; went to it, and was agreeably satisfied to find that the ideas I had formerly entertained with respect to the formation of gold as it is found on this earth, were entirely correct, viz. that the ore has been melted deep in the earth, or near the surface (I am yet unsettled which), and thrown out by the force of subterraneous fires which happen when the iron ore and sulphur of the same place are acted upon by water. The calcination the stones appear to have undergone, and the quantity of cineritious iron ore and stones, both at Reed's and every other place where gold has since been found, fully confirm me in this opinion, and go very far towards supporting my notions of the "Plutonic theory of the earth."

They did indeed find a piece that weighed twenty-eight pounds by the steelyard, which lost but three or four pounds in melting. It was, by their description, about the length and breadth of a spade-mould, generally two inches thick, uneven, and enclosed a quantity of white flint gravel. It was dug up from under the roots of an alder, about six inches below the surface of the bottom of the creek, and near the bank of the same, from which a considerable hill immediately rises. They also found another piece under the roots of an ash, which grew in the same bank; and near the same place the other was found, which weighed nine pounds; an-

other, which weighed three pounds, and several of lesser size. They have this summer found two large pieces, one weighing one-half pound, and the other, one-fourth pound. When they first discovered this mine, they dug up the stones, clay, &c. and picked up what they could find, and then they took to washing the sand in frying pans, but now they wash in a faster way. They have boxes of convenient size, with tin bottoms, made full of holes, which are placed on steel sliders, in larger boxes, and have portable pumps to pump water on the clay, sand, &c. While it is slidden backward and forward, the small particles of gold fall through the holes with the sand into the box below, while the larger pieces of stones and gravel remain in the box above. This latter way they learned of a gentleman from Baltimore, who has bought a plantation on the same creek, one-half mile below Reed's, where there is abundance of small gold in the sand of the creek, and an immense number of particles that can only be seen with a microscope. He has a machine which he had made in Baltimore, to clear the coarse sand from the fine and the gold, and prepare it to be mixed with the mercury; but he lets nobody see this machine, lest they should learn how it is made.

I found some small particles, by washing the sand of creeks near Reed's, and then proceeded north-easterly, inquiring for places similar to Reed's, and thus reducing my analogical theory to practice. I found gold in various places until I came within six miles of Deep River, sixty or seventy miles from Reed's, where, finding but little, I returned to Rocky River, and set out in a south-west direction, fifteen or twenty miles, and found it in several places; but afterwards met with none, although I reached twenty or thirty farther, even to Catawba, in South-Carolina. I examined the country south-east, eight or ten miles, into the long-leaved pine, and found little or none; and also to the north-west of the tract, running north-east and south-west from Reed's, and found but little. The people here have found on the top of the ground, in several parts of this country, some clear lumps, some pieces with a little quartz, and some with a great deal intermixed with them. Two pieces, weighing each one pound, were ploughed up, one near a creek which empties in on the south-west side of Rocky River, and the other near a creek which empties into the river Uwaree, north-east of Yadkin River. The first mentioned piece I have seen. I have found small particles of gold in

the creeks at both places, but they are not worth working.

The hills adjoining the branches where I found these samples of gold are very thickly covered with white quartz, and some of it of a large size, so that there is a probability of finding veins of it, by digging into their tops or sides, and if this is found to be the case, those who dig will be likely to find pieces and particles of gold intermixed with the flint. I am apt to think the Spaniards find their gold in this way sometimes.

Several kinds of pyrites abound in this country, both where gold is found, and where it is not; specimens of which I have collected, and hope to present to you on my return, which may possibly be the ensuing winter if I have good success. I expect to publish a more scientific account of this country than the one above given.

I forgot to mention, in its proper place, that I had visited the supposed artificial wall, ten or fifteen miles north of Salisbury, and believe it to be a natural production. The basaltes of which it is composed are of the same nature as that of New-Jersey; and, in breaking some of them, I found veins of whitish powder of the same appearance as the cement between the stones of the wall, as it was described to me by Mr. Robly, who lives near the place; for that part of the wall that was laid bare by men hired for the purpose has been thrown down and scattered by the numerous visitants from time to time, so that it was with some difficulty that, by digging there, I could bring to view even the top of the wall. Its cement is altered and changed by the water, and this fluid, in some degree, decomposes it, and renders it of the colour of ochre. A vein of basaltes runs north and south adjoining this place, but the country in general hereabout is not made up of that stone.

OBSERVATIONS *on the Non-Importation of the YELLOW FEVER into Spain.* By Dr. FELIX PASCALIS.

[Continued from page 391 of vol. iii. Hex. 2.]

THE report of the Professor, Dr. J. N. Berthe, of Montpellier, to the French government, fills up a large octavo volume. We understand that Drs. Lafabrie and Broussonet, the other Commissioners who composed the medical

Itinerant band throughout the kingdom of Spain, decidedly opposed the assumed doctrine of importation, and declined giving their concurrence to its promulgation. This work is, however, decorated with an approbatory preamble from the faculty of Montpellier, and was thereby better calculated to recommend a system which the alarm of maritime nations, and the anxiety of all the governments of Europe were rendering more acceptable and satisfactory.

The first part offers so many minute details relative to the departure, journey, and incidental circumstances of the expedition, that the reader who seeks for argument and instruction feels threatened with disappointment. Then follows the historical account of the prevalence of the yellow fever in the southern provinces of Spain, from the period of its supposed introduction by American vessels. All the reasonable proofs and documents which are alleged we have already refuted; but we should remark, that if the doctrine of *material* importation of an undefined specific contagion could not be superseded by any other, Professor Berthe would claim no merit by a critical exposition of the most important facts; for he has merely re-echoed the popular tales handed about among the Spaniards. With exaggeration and misconstructions, he undertakes to treat successively of interesting subjects on the origin of the yellow fever; its symptoms, modes of treatment, remedies, preventives, and purifications. The prolixity of these various articles is the more astonishing, as they are unsupported by medical documents, and, as it were, diverted from any of the interesting questions on the pathology of the disease, and on the remedies which, of late years, have exercised so much the skill and the pen of eminent physicians of North-America, of the West-India islands, and of England.

With these previous observations on the nature of the Report, the reader will acknowledge that this antagonist is not entitled to any discussion or controversy with us, as he appears absolutely unacquainted with our own practical investigations and authoritative facts; but as it is intended to convince such of our medical brethren and enlightened fellow-citizens as still adhere to the opinion of importation, that no credit is to be given to that famous Report, we will collect, for their instruction, some of the gross misrepresentations, egregious inconsistencies, singular paradoxes, and unphilosophical assertions with which it abounds; they will judge afterwards for themselves, whether it deserved to influence

the governments of Europe in the system of quarantine they have adopted.

1. As the supposed introduction rests upon the sole fact of an American vessel from Havanna and Charleston, which arrived in Cadiz in the beginning of July, 1800, we have been particular in ascertaining all the circumstances of that fact, from official documents, before we should offer any kind of refutation: "Three men on board of the *Dolphin*," we have said, "died at sea," &c. But Professor J. N. Berthe has falsely swelled that number to nine of them (vide Appendix), and improperly suggested that they all died with the yellow fever. This is not all; "at that period of time, the principal sea-port towns of the United States had suffered much from that epidemic." We grant it. It is true also, that the College of Physicians of Philadelphia had sanctioned the doctrine of its importation from the West-India islands; but it is false that that body represented, or in any way expressed, the opinion of the faculty of the United States. Of the numerous writers on this side of the Atlantic, who have so meritoriously investigated the subject, and opposed, during ten years, the belief which Professor Berthe construes into the general opinion of the American people, he knows nothing at all. He mentions Rush, without authority from his writings; and, among the few writers of this country who have professedly advocated the foreign origin, he is reduced to the only evidence of *Dr. Mathew Carey*, whom he has thus transformed into an eminent physician, to prove that the yellow fever of 1793 spread from Philadelphia all over the United States.*

2. Having thus laid aside all sources of instruction and authority, even that of the celebrated Chisholm, who, long ago, and with plausible arguments, had assigned a complete geographical course of the Boulam, or yellow fever, through the West-Indies and North-America, Professor B. cannot be fortunate in his attempt to define and describe that disease, with all its attending symptoms and prognostics. He

* Mr. Mathew Carey, a respectable printer and bookseller, is the well-known author of an interesting account of the pestilence which visited Philadelphia during the summer and fall of 1793. This little work is such a faithful portraiture of all the circumstances connected with the distressing calamity, that it met with a very extensive circulation. The author, a man of sense and judgment, in expressing his opinion concerning the origin of the yellow fever, did not offer himself as a medical inquirer, nor did he assume any medical authority.

might, on these points, have consulted at least the works of his countrymen Pouppé Desportes, DAZILE, Le Chevalier, Pierre Campet, &c. A man of genius remains, however, privileged in his theoretical views; and how far the Montpellier professor might keep with advantage his own ground of originality in his pathological definitions of the yellow fever, I leave it to the reader to determine. "It is constituted," says he, "by a contagious element; then there is an humoral, bilious, gastric affection; then a nervous spasmodic cause; and, at last, an humoral degeneration of a bilious putrid nature!" (p. 233.)

After all this *verbiage*, our author declares the proper definition of the yellow fever to be that of a *Nervoso-putrid bilious fever*. (p. 366.)

3. We learn from the same, that every atmospheric occurrence, which in the common belief might create an epidemic, existed in the south of Spain during the summer and fall of 1800. He mentions particularly the dire effects of the east wind in that country, how long it prevailed, and how much it increased the number of the sick. He has enumerated the strange characters of various diseases that existed in all the populous towns from the beginning of the spring. In Seville he took notice of the low, filthy, and unhealthy situation of the suburb of Triana, and of many streets in the city which are confined and unpaved. In Cadiz he observed, that the pestilential current constantly kept its direction from the south-east to the north-west. Pressed by the weight of so many external causes which might have operated against the health of the inhabitants, he concludes, that if the yellow fever had not been imported, there must have been an epidemic similar in Spain to that of Certe, on the French Mediterranean coast (p. 366), where a considerable mortality prevailed at the same time. But, in spite of such strong documents and stubborn facts in favour of a home-engendered pestilence, which diffused itself under the influence of various external causes, Mr. B. inconsistently declares (p. 74), that this disease offered no epidemical character; "*Elle ne tenoit en aucune maniere au génie Epidémique.*" Is this a justifiable mode of reasoning among philosophers and physicians?

4. Large books are sometimes very great evils. They easily flow from pens and minds unrestrained by logical rules, and then their authors are exposed to deviation from common sense, proportioned to their voluminous and undi-

gested pages. Dr. J. N. Berthe, who never had seen a single case of the yellow pestilence, undertook to write much upon it from hearsay, and, commenting upon the modes of treatment pursued by the Spanish physicians, who had borne all the labour of practical experience during a long and dismal period, again blundered, and diametrically opposed his notions of specific disease, positively declaring, that in the yellow fever the treatment should never be *specific*; which assertion is also subversive of clinical precepts, as far as they could be applied to the treatment of a contagious disease; but of this kind of contagion I can point out no less than four different shapes which he gives to it in his official communications. To the French Ambassador at Madrid he writes, "that the contagious power of the yellow fever is incalculable:" and to the Minister at Paris, that "vigorous precautions, and public measures, are not so absolutely necessary in this pestilence as in the *Levantine* plague. To the Board of Health of Cadiz he expressed an opinion favourable to the non-reproduction of the calamity, as it required the concurrence of the many causes which at first had created it. In fine, he observed, in a note of the appendix, that cases of the yellow fever might possibly occur without any contagion. (p. 177.)

5. If we advert to the proposed measures for prevention and purification, nothing is more dwelt upon than absolute interception of communications, ventilations, fumigations, &c. It is observed, that Spain was indebted for the happy interception of the yellow fever to guards and military cordons; but we are taught afterwards to wish for more effectual measures, nay, to reprobate them entirely, while the Medical Commissioner so emphatically informs the French Ambassador (p. 326), that military cordons cannot be kept inviolable; that they are dangerous, as much as they are useless; that their establishment is ruinous all over the district they circumscribe; and that they subject the inhabitants to all the diseases that are the offspring of panick and poverty!

It is time to dismiss this strange report, with many more of its misconstrued facts, incoherent observations, contradictory assertions, and unphilosophical opinions; seeing the author has shown himself so destitute of necessary documents from respectable medical writings, and from many recent occurrences of the terrible disease on the nature of which he ventured to write. Thus, he was not entitled to cre-

dit, nor to the authority which influenced governments in Europe to adopt quarantine laws, by which they think better to protect their large cities and numerous people.

It remains for me to acknowledge, that Professor Berthe is a good and perspicuous classical writer. He may be eminent in natural philosophy, and possessed of so many polite and literary qualifications as to make it a cause of regret that he should have augmented the catalogue of those well-meaning medical characters who, wishing to diffuse useful knowledge, and the best means of assistance among their fellow-creatures, have still more confused and perplexed the object of their investigations.*

*Detailed ABSTRACT of the French Professor DUMERIL's
System of ZOOLOGY, or, ZOOLOGY ANALYTIQUE.*

THE last plan which we have seen for the classification of animals, is that of the distinguished C. DUMERIL, Professor in the school of medicine at Paris, and published at that city in 1806. By him animals are defined to be "beings possessing life, digestion, sensation, and spontaneous motion."

The arrangement is very elaborate, and is evidently the result of much reflection, and minute examination of species. It is an attempt to combine natural method with artificial system; and with this view he has departed from the rule laid down by the great Swedish naturalist, and followed by Fabricius the Dane, that in Zoology, as in Botany, the characters of the classes, orders, and genera ought to be derived from one and the same part. While Mr. D. allows the propriety of this rule in beings organized as vegetables are, he denies the beneficial extension of it to animals. He therefore takes his marks of discrimination and association from all the organs, or parts of the body where he can find them. By proceeding in this manner, he blends the characters of nature with the contrivances of art, and, by the union of the two, improves the classification. It is not offered as

* The author proposed to add to these observations a collection of historical facts and local circumstances, intended to evince the domestic origin of the European yellow fever. He now wishes to substitute for it the analytical review of the Spanish work of Don Rodriguez Armesto on the same subject, as more useful and impressive, and which will appear in one of the succeeding numbers.

wholly new, but as an improvement upon the system of his predecessors. The great outlines of the plan were drawn by Cuvier, in the tables annexed to the first volume of his *Comparative Anatomy*. We give an abstract of this method of Zoology from the French original, which fills a volume of nearly four hundred pages. The long and hard terms from Greek and Latin roots with which it abounds are rendered, by corresponding names, in English, as nearly as could be conveniently done. But it was a task of difficulty to translate such *lignumvitæ* words at all, even into a language so abundant in compound epithets as our own.

According to this zoologist, animals are distributed into nine classes :

I. SUCKLERS.

II. BIRDS.

III. REPTILES.

IV. FISHES.

V. MOLLUSCAS.

VI. CRUSTYCOATS.

VII. INSECTS.

VIII. WORMS.

IX. ZOOPHYTES.

I. The first of these is substantially the same with the classification proposed by Professors Cuvier and Geoffroy. It has, however, been modified by Mr. D. in such manner as to suit the present discoveries in science in several respects, and more especially those made by M. de la Cèpede. They defined it to comprise "animals with back bones, teats, lungs, and with red and hot blood." The SUCKLERS are subdivided into fourteen families: 1. Two-handed, *man*, one genus. 2. Four-handed, or four-footed, *orang*, *ape*, *baboon*, &c. twelve genera. 3. Hand-winged, or wing-footed, *bat*, *vampire*, &c. six genera. 4. Flesh-eaters, or toe-walkers, *cat*, *dog*, *otter*, *hyæna*, *marten*, &c. eight genera. 5. Flat-foot-walkers, *mole*, *bear*, *hedge-hog*, *coati*, &c. eight genera. 6. Foot-handed, or pouch-bellied, *opposum*, *wombach*, &c. six genera. 7. Gnawers, *rat*, *squirrel*, *hamster*, *beaver*, *hare*, *porcupine*, *kangaroo*, *cavy*, &c. fifteen genera. 8. Toothless, *ant-bear*, *armadillo*, &c. six genera. 9. Sloths, *tardigrade*, one genus. 10. Thick-skins, *tapir*, *hog*, *rhinoceros*, *elephant*, &c. six genera. 11. Cud-chewers, or cloven-footed, *cow*, *camel*, *deer*, *sheep*, *goat*, *antelope*, &c. eight genera. 12. Single-hoofed, *horse*, one genus. 13. Amphibious, *seal*,

manati, *morse*, and *dugong*, four genera. 14. Whales, *dolphin*, *cachalot*, and different cetaceous creatures, ten genera.

II. The BIRDS are thus defined: "Oviparous animals, with back-bones, lungs, and hot blood; covered with feathers, and having wings instead of fore-feet." These are classed very nearly after the method of Cuvier, as detailed in his elementary treatise on the natural history of animals. The alterations made by Mr. D. chiefly relate to the genera. The animals of this class are disposed into six orders: 1. DEVOURERS; and this order is subdivided into three families; (a) the *naked-necked*; (b) the *feathered-necked*; and, (c) the *nocturnal birds of prey*. To the first family belong the *vultures*, two genera. To the second, the *hawks*, *falcons*, *eagles*, &c. six; and to the third, the *owls*, three.

2. SPARROWS; and this order is subdivided into seven families; (a) *notch-billed*, composed of the *butcher-birds*, *thrushes*, *tanagras*, &c. five genera; (b) *tooth-billed*, *mamot*, *phytotome*, and *calas*, three genera; (c) *full-billed*, *magpie*, *paradise*, *crow*, &c. five genera; (d) *cone-billed*, *starling*, *robin*, *gross-beak*, *cross-beak*, *cow-bird*, &c. ten genera; (e) *awl-billed*, *lark*, *wagtail*, *manakin*, &c. four genera; (f) *flat-billed*, *swallow*, *swift*, and *night-hawk*, three genera; (g) *slender-billed*, *humming-bird*, *wren*, *bee-catcher*, *king-fisher*, &c. eight genera.

3. CREEPERS; which are divided into two families; (a) the *wedge-billed*, to which belong the *cuckoos*, *orioles*, *wry-necks*, &c. five genera; and, (b) the *light-billed*, including the *toucans*, *parrots*, *cockatoos*, *parroquets*, &c. eight genera.

4. The PHEASANTS constitute the fourth order, and are distributed into three families; (a) the *pigeons*, one genus; (b) the *cocks*, including the *turkey-cock*, *peacock*, *Guinea-cock*, *black-cock*, *barn-door-cock*, *growse*, *partridge*, *quail*, &c. eight genera; (c) the *short-wings*, as the *ostrich*, *cassowary*, *dodo*, &c. four genera.

5. To this order belong the STILTERS, which are arranged in four families; (a) *flat-bills*, as the *gallinule*, *coot*, *rail*, *oyster-cracker*, &c. five genera; (b) *razor-bills*, *stork*, *heron*, *crane*, &c. six genera; (c) *broad-bills*, *spoon-bill*, *flamingo* and *spatula*, three genera; (d) *slender-bills*, *plovers*, *curlews*, *snipes*, &c. five genera.

6. In the sixth order are placed the WEB-FOOTED WATER-FOWL. These are disposed in four families; (a) *saw-billed*, comprehending the *ducks* and *divers*, two genera; (b)

finny-feet, *pelican*, *cormorant*, *man of war bird*, *tropick-bird*, &c. six genera; (c) long-winged, *albatros*, *peterel*, *avoset*, *sheer-water*, &c. six genera; (d) short-winged, as the *grebe*, *guillemot*, *awk*, *penguin*, and *plungers*, five genera.

III. The definition of the third class is this: "Animals with back-bones, lungs, and cold blood, without either hair, feathers, or teats." The REPTILES are classed according to the method of Mr. Brogniart, but the arrangement is improved from the labours of Laurenti, Schneider, La Cèpede, Daudin, and Latreille. They are all comprised under four orders; 1. TORTOISES, as *loggerheads*, *hawks-bills*, *snappers*, *tarrapins*, &c. four genera. 2. LIZARDS, which are divided into two families; (a) the flat-tailed, and (b) the round-tailed. To the former belong the *crocodile*, *alligator*, *tupinambis*, *dracæna*, &c. six genera; and to the latter, the *chameleon*, *newt*, *iguana*, *skunk*, *dragon*, &c. ten genera. 3. SERPENTS. The creatures of this order are divided into two families of (a) Homodermes, and (b) Heterodermes. To the former belong the serpents which have an uniform skin on their backs and bellies, as the *blind-worm*, *amphisbæna*, *wart-snake*, *water-snake*, &c. six genera. To the latter, the serpents with scaly backs and shielded bellies, such as the *rattle-snake*, *viper*, *copperhead*, *adder*, *black-snake*, *boa*, &c. eight genera. FROGS make the fourth order, and are formed into two families; (a) the *tail-less*, including the Surinam frog, the common toad, the ordinary frog, &c. four genera; (b) the *tailed*, embracing the *triton*, *salamander*, *proteus*, and *siren*, four genera.

IV. The FISHES are "animals with back bones, gills and cold blood, but destitute of lungs, hair, feathers and teats." This class is not materially varied from the method of La Cèpede. And this, as well as the class of reptiles, is believed to be a masterly piece of nomenclatural arrangement. All the genera are adopted from that naturalist, and Mr. D. has only taken the liberty of making a new disposition of them now and then. The animals of this class are divided into two sub-classes; to wit, *cartilaginous fishes with gills*, and *bony-fishes with gills*. Each of these sub-classes is subdivided into four orders.

1. The first order of the CARTILAGINOUS FISHES WITH GILLS comprehends those which *breathe through round holes*. Of these there are two families; (a) the round-mouthed, including the *lampreys* and *suckers*, two genera; and (b) the cross-mouthed, the *shark*, *ray*, *torpedo*, *dog-fish*, *skate*, &c. six genera.

2. Those which *respire through slits in the sides of their necks*, furnished with membranes, but destitute of opercles. Of these there are four genera, comprising the *fishing-frog*, *chimæra*, *balistes*, &c.

3. Such as have *gills with opercles and without membranes*, arranged in three genera, the *sturgeon*, *pegasus*, and *polyodon*.

4. Here are placed cartilaginous fishes with *perfect gills*, i. e. possessing both opercles and membranes. They are distributed into three families; (a) sucking-mouths, as the *centriscus*, &c. three genera; (b) joined-fins, as the *cyclopterus*, &c. two genera; (c) bony-skins as *diodon*, *tetraodon*, &c. six genera.

1. The first order of the PONY FISHES WITH GILLS consists of the *holobranches*, or such as have *those organs complete*. This order is split into four sub-orders; *apodes*, or such as have no ventral fins; *jugulares*, or such as have them under the throat; *thoracici*, or those in whom they are placed under the pectoral fins; and *abdominales*, such as have them under the belly. The first sub-order, or holobranches apodes, is divided into two families; (a) *such as are deficient in some other fins besides the ventral*, as the *electrical eel*, &c. &c. nine genera; (b) *such as possess all their fins except the ventral*, as the *common eel*, *sword-fish*, &c. nine genera. The second sub-order, or holobranches jugulares, comprehends the *cod*, *blenny*, &c. eleven genera. 3. The third sub-order, or the holobranches thoracici, is divided into twelve families; (a) blade-bodied, as the *cepæles*, &c. six genera; (b) union-footed, *goby*, &c. two genera; (c) free-footed, the *remora*, &c. three genera; (d) spindle-bodied, as the *mackarel*, &c. fifteen genera; (e) smooth-jawed, as the *sparus*, *labrus*, *mullet*, &c. seventeen genera; (f) rough-jawed, as *scarus*, &c. three genera; (g) fin-backed, *coryphæna*, &c. six genera; (h) big-headed, *cat-fish*, &c. five genera; (i) fingered, *gurnards*, &c. four genera; (j) flat-bodied, *flounders*, &c. two genera; (k) thorny-jawed, *bull-head*, *miller's-thumb*, &c. eight genera; (l) oval-bodied, *chatodon*, *zeus*, &c. eighteen genera. The fourth sub-order, or the holobranches abdominales, is sub-divided into eight families; (a) syphon-mouthed, *pipe-fish*, &c. three genera; (b) cylinder-mouthed, *cobitis*, *amia*, &c. nine genera; (c) prickly-finned, *silurus*, &c. fifteen genera; (d) double-finned, *cirrhitæ*, &c. four genera; (e) toothless scaly-jawed, *flyng-fish*, &c. five genera; (f) smooth-jawed, *shad*, *herring*, *barbel*, &c. thirteen

genera; (g) leather-finned, *salmon*, *trout*, &c. five genera; (h) long-jawed, *pike*, &c. eight genera.

2. The second order of the bony fishes with gills includes those whose branchial opercles are not furnished with membranes. It contains but one species, the *sternoptyx*.

3. The third order of the bony fishes with gills contains those which have gills with membranes, but without opercles. It comprehends but the *mormyrus*, and one other genus.

4. The serpent fishes, having neither ventral fins, nor membranes, nor opercles to the gills, belong to this order. It consists of five genera, in which are placed some curious kinds of *eels*, &c.

V. The MOLLUSCAS, or worms in shells, are so called "from their being of a soft texture, and having neither backbones nor joints, but being constituted of vessels, pulmonary organs, and nerves without ganglions." The method of Cuvier is here pursued, who separated these animals from the vermes, and erected them into a new class, with appropriate orders. The object of the author being to arrange the animals themselves, and not to erect a system of conchology from their shells, he has not availed himself much of the labours of Messrs. Poli and Lamarck, but adhered to the arrangement of the living beings which inhabit the shells, as received at present among the learned. Accordingly the Mollusca class is divided into five orders. 1. The tentacular, including the *cuttle-fishes* and *squids*, six genera. 2. Finned, *clio*, *hyale*, &c. four genera. 3. Belly-creepers, living many of them in shells, and arranged in three families; (a) skin-lunged, *limpets*, *sea-ears*, *blubbers*, &c. eight genera; (b) hole-lunged, *snails*, *neréids*, &c. fourteen genera; (c) tube-lunged, are all inhabitants of the ocean, and of univalve shells, thirteen genera. 4. Headless, or their heads confounded with the bodies, comprehending the *bivalve-shelled* animals, eleven genera. 5. Retractable, *molluscas* with fixed shells, *borers*, *pipe-worms*, &c. five genera.

VI. The CRUSTACEOUS ANIMALS, or insects in shells, form the sixth class. Mr. D. has herein almost wholly followed the course pointed out by Latreille and Lamarck. He owns that he is so well pleased with their arrangement, that he felt no inclination to attempt alterations in it. The class is divided into seven families; (a) buckler-backed, *limulus*, &c. five genera; (b) double-crusted, *daphnis*, &c. four genera; (c) naked swimmers, *cyclops*, &c. five genera; (d)

sharp-snouted, *maja*, &c. five genera; (e) broad-backed, *crabs* of all sorts, &c. eleven genera; (f) long-tailed, *hermit craw-fish, lobster*, &c. ten genera; (g) distinct-headed, *mysis*, &c. five genera. These are defined to be "animals without back bones, but furnished with vessels and respiratory organs, in the form of plates or gills, and with feet often to the number of ten."

VII. The class of INSECTS is more numerous than the four entire classes of animals with back bones, but is, at the same time, more easy to study. Mr. D. says, "I have exhibited them after a method which is quite new, and at which I have been labouring for more than twelve years. The orders are those of DEGEER. Some of the other divisions are borrowed from GEOFFROY, LINNE, FABRICIUS, OLIVIER, and LATREILLE. There will be found great conformity between the researches of this latter naturalist and mine; but if I have arrived at the same decisions, it was by pursuing very different investigations, which led us both to nearly similar results about the same time. This is evident from our publications, and from the different memoirs which we have read before the learned societies. In other respects I acknowledge the great superiority of M. Latreille, in every qualification of a true naturalist; that is, in the acquaintance with species, to which he has applied himself in a most particular manner" *Insects* are defined to be "animals without back bones, gills, and circulating organs; with jointed bodies and articulated limbs." The class is divided into eight orders. 1. Coleoptera. 2. Orthoptera. 3. Neuroptera. 4. Hymenoptera. 5. Hemiptera. 6. Lepidoptera. 7. Diptera. 8. Aptera.

1. The first order, COLEOPTERA, is divided into four sub-orders. 1. Those which have five joints in all their legs, and constitute the following ten families; (a) flesh-eaters, *carabus*, &c. sixteen genera; (b) fin-footed, the coleopterous insects which *eat animal food and live in the water*, four genera; (c) short-winged, *staphylinus*, &c. five genera; (d) branched-feelers, *beetles*, &c. eight genera; (e) sawed-feelers, *lucanus*, &c. four genera; (f) clubbed-feelers, *dermestes*, &c. eleven genera; (g) solid-feelers, *dung-bugs*, &c. three genera; (h) sharp-breasted, *snapping-bug*, &c. six genera; (i) wood-borers, *vrillette*, &c. six genera; (j) soft-winged, *lampyris*, &c. eight genera. 2. Such as have four joints to their hinder legs, and five on the fore ones. They are divided into six families; (a) blisterers, *Spanish flies*,

potatoe-bugs, &c. ten genera ; (b) narrow-winged, *mordelle*, &c. six genera ; (c) sylvatics, *helops*, &c. six genera ; (d) dark-bugs, *tenebrios*, &c. five genera ; (e) light-haters, *blaps*, &c. nine genera ; (f) fungus-eaters, *mushroom-flies*, &c. eight genera. 3. Those which have four joints in all their legs. They are distributed into five families ; (a) horn-nosed, *weavils*, *horn-beetles*, &c. nine genera ; (b) cylinder-shaped, *apates*, &c. five genera ; (c) flat-bodied, *ips*, &c. seven genera ; (d) timber-gnawers, *cerambix*, &c. eight genera ; (e) herb-eaters, *cassides*, &c. twelve genera. 4. The fourth sub-order comprehends such coleopterous insects as have but three joints in their legs. They constitute five genera, among which the *coccinella*, &c. are included.

2. The second order of the class insects is the ORTHOPTERA, and consists of four families ; their character is, that the wings are folded over each other in a straight line on the back. The families are, (a) blattes, *cock-roaches*, *ticks*, &c. one genus ; (b) odd-figured, *mantis*, *walking-leaf*, &c. three genera ; (c) locusts, *cricket*, *grasshoppers*, &c. seven genera ; (d) tweezer-tailed, *ear-piercer*, &c. one genus.

3. The NEUROPTERA, or insects with naked reticulated wings, compose three families ; (a) roof-winged, *lion-pismire*, *termites*, &c. nine genera ; (b) jawless, *ephemeron*, &c. two genera ; (c) tooth-jawed, *dragon-fly*, &c. two genera.

4. The HYMENOPTEROUS insects have naked wings, veined lengthways, and consist of nine families ; (a) honey-makers, *bee*, &c. six genera ; (b) double-winged, *wasp*, &c. two genera ; (c) golden-flies, two genera ; (d) blossom-hunters, *hornets*, &c. four genera ; (e) insect-eaters, *ichneumons*, &c. (f) pismires, *ant*, &c. three genera ; (g) earth-diggers, *sphex*, &c. four genera ; (h) egg-hiders, *cinips*, &c. six genera ; (i) saw-tails, *tenthredo*, &c. five genera.

5. The HEMIPTERA are the insects with half wings. They consist of six families ; (a) snout-mouthed, *stink-bugs*, &c. seven genera ; (b) blood-suckers, *wood-ticks*, *bed-bugs*, &c. five genera ; (c) water-bugs, *back-swimmers*, &c. five genera ; (d) neck-mouthed, *cicada*, *fire-fly*, *glow-worm*, &c. eight genera ; (e) plant-suckers, *coccus*, *aphis*, *kermes*, &c. five genera ; (f) bladder-footed, *thrips*, &c. one genus.

6. The LEPIDOPTERA form the sixth order, and are known by the feathers, or minute scales which cover their wings. They are distributed into four families ; (a) club-horned, *but-ter-flies*, &c. three genera ; (b) spindle-horned, *sphinx*, &c. three genera ; (c) thread-horned, *silk-worm*, &c. three ge-

nera; (d) bristle-horned, *phalæna*, *moth*, &c. eight genera.

7. The order of DIPTERA embraces the insects with two wings, and is parcelled out into five families; (a) pump-mouthed, *fly*, *musquito*, *gnat*, &c. eleven genera; (b) smooth-horned, *hypoleon*, &c. ten genera; (c) silky-horned, *common fly*, &c. twelve genera; (d) mouthless, *goad fly*, &c. one genus; (e) water-flies, *tipula*, *wheat-insect*, &c. five genera.

8. The order APTERA comprehends the insects without wings. They are disposed in six families; (a) parasites, *flea*, *louse*, &c. three genera; (b) bird-lice, *ricinus*, one genus; (c) bristle-tailed, *podura*, &c. three genera; (d) hornless, *spider*, *scorpion*, &c. eight genera; (e) thousand-legs, *scolopendra*, &c. six genera; (f) four-horned, *oniscus*, &c. three genera.

VIII. VERMES make a class of "Animals without back bones, but having vessels and nerves, though destitute of jointed limbs." They compose two families; (a) with respiratory organs plain to be seen, as in *nereis*, *aphrodite*, *serpula*, &c. eleven genera; (b) with organs of respiration not manifest from without; *leech*, *earth-worm*, &c. six genera.

IX. The ZOOPHYTES, or animal plants, make the ninth and last class of animals. They are defined "to possess neither back bones, nerves, vessels, nor articulated members." In the arrangement of these Mr. D. has followed the most approved authors, and more especially Lamarck. Zoophytes are disposed in six families; (a) intestinal, *flukes*, *tape-worm*, *hydatid*, *ascaris*, &c. fourteen genera; (b) prickly skins, *sea-urchins*, *star-fishes*, &c. nine genera; (c) soft-skins, *animal-plants*, *sea-anemones*, *medusas*, *qualls*, &c. five genera; (d) microscopical, *hydra*, *wheel-polype*, *volvox*, and the other infusory animals, nine genera; (e) lithophytes or stony plants, *retipores*, *madrepores*, *nullipores*, *cellepores*, and the other similar productions, eleven genera; (f) ceratophytes, or horny plants, *sponge*, *coral*, *isis*, *gorgonia*, *coralline*, &c. twelve genera.

Through the whole of this work the author declares that he has made little use of the *Guide du Naturaliste dans les trois regnes de la Nature*, by VANDERSTEGEN, nor of the *Fundamenta Entomologia* of BRUNNICH.

 REVIEW.

ART. I. *Message from the President of the United States, communicating Discoveries made in exploring the Missouri, Red River, and Washita, by Captains Lewis and Clarke, Dr. Sibley, and Mr. Dunbar; with a Statistical Account of the Countries adjacent.* 8vo. p. 178. Washington. Way, 1806. *Published by Order of Congress.*

PERHAPS we cannot express the design of the present publication better than by quoting the words employed by the President in communicating it to Congress.

“ In pursuance of a measure proposed to Congress, by a message of January 18, 1803, and sanctioned by their appropriation, for carrying it into execution, Capt. Meriwether Lewis, of the first regiment of infantry, was appointed, with a party of men, to explore the river Missouri, from its mouth to its source; and, crossing the Highlands by the shortest portage, to seek the best water communication thence to the Pacific ocean; and Lieutenant Clarke was appointed second in command. They were to enter into conference with the Indian nations on their route, with a view to the establishment of commerce with them. They entered the Missouri May 14, 1804, and on the 1st of November took up their winter quarters near the Mandan towns, 1609 miles above the mouth of the river, in latitude $47^{\circ} 21' 47''$ north, and longitude $99^{\circ} 24' 45''$ west from Greenwich. On the 8th of April, 1805, they proceeded up the river in pursuance of the objects prescribed to them. A letter of the preceding day, April 7th, from Capt. Lewis, is herewith communicated. During his stay among the Mandans, he had been able to lay down the Missouri, according to courses and distances taken on his passage up it, corrected by frequent observations of longitude and latitude; and to add to the actual survey of this portion of the river, a general map of the country between the Mississippi and Pacific, from the 34th to the 54th degrees of latitude. These additions are from information collected from Indians with whom he had opportunities of communicating during his journey and residence with them. Copies of this map are

now presented to both Houses of Congress. With these I communicate also a statistical view, procured and forwarded by him, of the Indian nations inhabiting the territory of Louisiana and the countries adjacent to its northern and western borders; of their commerce, and of other interesting circumstances respecting them.

"In order to render the statement as complete as may be of the Indians inhabiting the country west of the Mississippi, I add Dr. Sibley's account of those residing in and adjacent to the territory of Orleans.

"I communicate also, from the same person, an account of the Red River, according to the best information he had been able to collect.

"Having been disappointed, after considerable preparation, in the purpose of sending an exploring party up that river, in the summer of 1804, it was thought best to employ the autumn of that year in procuring a knowledge of an interesting branch of the river called the Washita. This was undertaken under the direction of Mr. Dunbar, of Natchez, a citizen of distinguished science, who had aided, and continues to aid us, with his disinterested and valuable services in the prosecution of those enterprises. He ascended the river to the remarkable hot springs near it, in latitude $34^{\circ} 31' 4'' 16''$, longitude $92^{\circ} 50' 45''$ west from Greenwich, taking its courses and distances, and correcting them by frequent celestial observations. Extracts from his observations, and copies of his map of the river, from its mouth to the hot springs, make part of the present communications. The examination of the Red River itself is but now commencing."

The progress made by the party is fully explained by the commanding officer in his dispatch to the President, dated Fort Mandan, April 7, 1805.

"Herewith enclosed you will receive an invoice of certain articles which I have forwarded to you from this place. Among other articles you will observe, by reference to the invoice, sixty-seven specimens of earths, salts and minerals, and sixty specimens of plants: these are accompanied by their respective labels, expressing the days on which obtained, places where found, and also their virtues and properties when known. By means of these labels, reference may be made to the chart of the Missouri, forwarded to the Secretary of War, on which the encampment of each day has been carefully marked: thus, the places at which these specimens have been obtained, may be easily pointed out, or

again found, should any of them prove valuable to the community on further investigation.

" You will also receive herewith enclosed a part of Captain Clarke's private journal; the other part you will find enclosed in a separate tin box. This journal will serve to give you the daily details of our progress and transactions.

" I shall dispatch a canoe with three, perhaps four persons, from the extreme navigable point of the Missouri, or the portage between this river and the Columbia river, as either may first happen. By the return of this canoe I shall send you my journal, and some one or two of the best of those kept by my men. I have sent a journal, kept by one of the sergeants, to Capt. Stoddard, my agent at St. Louis, in order as much as possible to multiply the chances of saving something. We have encouraged our men to keep journals, and seven of them do, to whom in this respect we give every assistance in our power.

" I have transmitted to the Secretary at War every information relative to the geography of the country which we possess, together with a view of the Indian nations, containing information relative to them, on those points with which I conceived it important that the government should be informed.

" By reference to the muster rolls forwarded to the war department, you will see the state of the party: in addition to which we have two interpreters, one negro man, servant to Capt. Clarke; one Indian woman, wife to one of the interpreters, and a Mandan man, whom we take with a view to restore peace between the Snake Indians and those in this neighbourhood, amounting in total with ourselves to thirty-three persons. By means of the interpreters and Indians, we shall be enabled to converse with all the Indians that we shall probably meet with on the Missouri.

" From this place we shall send the barge and crew early to-morrow morning, with orders to proceed as expeditiously as possible to St. Louis: by her we send our dispatches, which I trust will get safe to hand. Her crew consists of ten able bodied men, well armed, and provided with a sufficient stock of provision to last them to St. Louis. I have but little doubt but they will be fired on by the Siouxs; but they have pledged themselves to us that they will not yield while there is a man of them living. Our baggage is all embarked on board six small canoes and two peroques; we shall set out at the same moment that we dispatch the barge. One,

or perhaps both of these pirogues, we shall leave at the falls of the Missouri, from whence we intend continuing our voyage in the canoes, and a pirogue of skins, the frame of which was prepared at Harper's ferry. This pirogue is now in a situation which will enable us to prepare it in the course of a few hours. As our vessels are now small, and the current of the river much more moderate, we calculate upon travelling at the rate of 20 or 25 miles per day, as far as the falls of the Missouri. Beyond this point, or the first range of rocky mountains, situated about 100 miles further, any calculation with respect to our daily progress can be little more than bare conjecture. The circumstance of the Snake Indians possessing large quantities of horses is much in our favour, as by means of horses the transportation of our baggage will be rendered easy and expeditious over land, from the Missouri to the Columbia river. Should this river not prove navigable where we first meet with it, our present intention is to continue our march by land down the river, until it becomes so, or to the Pacific ocean. The map* which has been forwarded to the Secretary of War, will give you the idea we entertain of the connection of these rivers, which has been formed from the corresponding testimony of a number of Indians who have visited that country, and who have been separately and carefully examined on that subject, and we therefore think it entitled to some degree of confidence. Since our arrival at this place we have subsisted principally on meat, with which our guns have supplied us amply, and have thus been enabled to reserve the parched meal, portable soup, and a considerable proportion of pork and flour, which we had intended for the more difficult parts of our voyage. If Indian information can be credited, the vast quantity of game with which the country abounds through which we are to pass, leaves us but little to apprehend from the want of food.

“ We do not calculate on completing our voyage within the present year, but expect to reach the Pacific ocean, and return as far as the head of the Missouri, or perhaps to this place, before winter. You may therefore expect me to meet you at Montecello in September, 1806. On our return we shall probably pass down the Yellow Stone river, which, from Indian information, waters one of the fairest portions of this continent.

* For an account of this map see *Med. Rep. Hex. ii. vol. iii. p. 315.*

"I can see no material or probable obstruction to our progress, and entertain, therefore, the most sanguine hopes of complete success. As to myself, individually, I never enjoyed a more perfect state of good health than I have since we commenced our voyage. My inestimable friend and companion, Captain Clarke, has also enjoyed good health generally. At this moment every individual of the party is in good health and excellent spirits, zealously attached to the enterprise, and anxious to proceed; not a whisper of discontent or murmur is to be heard among them; but all in unison act with the most perfect harmony. With such men I have every thing to hope, and but little to fear."

In the course of their voyage, our enterprising travellers have collected a large amount of information concerning the aboriginal tribes inhabiting Louisiana and its northern and western boundaries. Their inquiries have been minute and extensive. Of this the reader will be sensible when he is informed that they are directed, among others, to the following points: the common names by which those numerous bands of people are known to the whites, the ancient and formal names retained by themselves, and the colloquial terms or nicknames by which they often call each other, are carefully noted; pains has been taken to discover whether the language of each is original or derivative; how numerous are the villages of the stationary inhabitants, and the huts of the rovers; what the amount of population, and how many warriors each nation can turn out: our travellers have likewise sought out the rivers near which their villages are situated, the people with whom they carry on their principal trade, the places where this commercial intercourse is held, with the probable amount of exports and imports, estimated in dollars at the St. Louis prices: they also have calculated the peltries, furs, and other articles which the nations respectively furnish at present, the sorts of these, and of other natural productions which their country would afford under additional encouragement; and have further reported the tribes with whom they have wars and alliances, with a variety of other miscellaneous information.

Among the enumerated tribes are the *Great Osages*, the *Little Osages*, *Kanzas*, *Ottoes*, *Missouris*, *Panias proper*, *Panias republican*, *Panias Loups*, *Mahas*, *Poncaras*, *Ricaras*, *Mandanes*, *Ahwahhawas*, *Minetares*, *Ayauwas*, *Saukees*, *Renards*, *Sieux*, as distributed into ten bands, and these bands ramified and subdivided much further; *Chyennes*, *Wete-*

pahatoes, Kiawas, Kanenavich, Steatan, Catakas, Nemosen, Dotames, Castahanas, Crow Indians, Paunch Indians, Assiniboins in three bands, Chippeways, Algonquins, Knistenaus, Fall Indians, Cattannahaws, Black-footed Indians, Blue-mud and Long-haired Indians, Flatheads, Aliatans, or Snake Indians, Paducas. On each of these native bodies of Indians there is an historical summary, for the particulars of which we refer to the work itself, by consulting which the curious student will discover abundant proofs of the industry and success of our adventurers.

This elaborate survey of the aborigines, by Capt. Lewis, is succeeded (in p. 66) by sketches of the several races of red men dwelling south of the Arkansas River, and between the Mississippi and Bravo, by J. Sibley, Esq. The several people enumerated by this intelligent gentleman are the *Caddoes, Yattasees, Nandicoes, Adaize, Aliches, Keychies, Nabe-daches, Bedies, Aceokesaws, Mayas, Carankouas, Cances, Tankawas, Tawakenoes, Towiaches, Hietans, Natchitoches, Biloxis, Appalaches, Alabamas, Conchattas, Pacanas, Attacapas, Opelousas, Tonicas, Pascaguolas, Tenisahs, Choctaws, Washaws, and Arkansas*, with a remnant of the *Humas*. The reader who is curious in this kind of historical research will be gratified by an inspection of the original narrative of Dr. Sibley.

The next memoir in this collection is also by Dr. Sibley. It treats of the Red River, and the adjoining country. This stream forms a junction with the Mississippi about two hundred and twenty miles above Orleans. The writer of this description was acquainted with it as far as seventy miles above the settlement of Natchitoches, a distance in the whole computed to be about four hundred miles from the point of union, according to the course of the river. Beyond this his narrative is chiefly made up from the information of Mr. Francis Grappe, a Frenchman, who was born about five hundred miles above Natchitoches, and passed thirty years of his life at a military post then supported there by France. But as this person's knowledge did not extend much above the Panis town, Dr. S. obtained a further account of the Red River from Mr. Brevel, a native of the Caddo old towns. This we extract in the words of the original. p. 109.

"About forty years ago I sat off, on foot, from the Panis nation (who then lived about fifty leagues above where they now live), in company with a party of young Indian men, with whom I had been partly raised, on a hunting voyage.

and to procure horses. We kept up on the south side of Red River, as near it as we could conveniently cross the small streams that fall in, sometimes at some distance, and at others very near it, and in sight of it. We found the country all prairie, except small copses of wood, cedar, cotton wood, or musketo, amongst which a stick six inches in diameter could not be found; the surface becoming more and more light, sandy and hilly, with ledges or cliffs of a greyish sandy rock, but every where covered with herbage. We found many small streams falling into the river, but none of any considerable size, or that discharged much water in dry seasons, but many deep gullies formed by the rain-water. After travelling for several days over a country of this description, the country became more broken, the hills rising into mountains, amongst which we saw a great deal of rock-salt, and an ore the Indians said was my (meaning the white people's) treasure, which I afterwards learned was silver. Amongst these mountains of mines we often heard a noise like the explosion of a cannon, or distant thunder, which the Indians said was the spirit of the white people working in their treasure; which, I afterwards was informed, was the blowing of the mines, as it is called, which is common in all parts of Spanish America where mines exist. The main branch of the river became smaller, till it divide into almost innumerable streams that issued out of the valleys amongst these mountains; the soil very light and sandy, of a reddish grey colour. We travelled on from the top of one mountain to the top of another, in hopes the one we were ascending was always the last, till the small streams we met with ran the contrary way, towards the setting sun, and the lands declining that way. We continued on till the streams enlarged into a river of considerable size, and the country became level, well timbered, the soil a rich black loam; the waters were all clear and well tasted. Here we found a great many different tribes of the Hietan, Appaches, and Concee Indians; we likewise fell in with them frequently from the time we had been a few days out from the Panis towns, and were always treated kindly by them. I believe the distance from the Panis old towns to where we saw the last of Red River water, is at least one hundred leagues; and, in crossing over the ridge, we saw no animals that were not common in all the country of Louisiana, except the spotted tyger, and a few white bears. After spending some days on the western waters, we sat off for the settlements of

Santa Fè; steering nearly a south-east course, and in a few days were out of the timbered country into prairie; the country became broken and hilly; the waters all running westwardly; the country cloathed with a luxuriant herbage, and frequently passing mines of silver ore. We arrived, at length, at a small, meanly built town in the Santa Fè settlement, containing about one hundred houses, round which were some small cultivated fields, fenced round with small cedar and musketo brush, wattled in stakes. This little town was on a small stream of water that ran westwardly, and in a dry season scarcely run at all; so that the inhabitants were obliged to water their cattle from wells. And I understood that the bayou upon which this town is situated was no part of Rio Grande, but fell into the western ocean; but of that I might have been mistaken. I understood that similar small towns, or missions, were within certain distances of each other for a great extent southwardly, towards Mexico; and that the inhabitants were mostly christianised Indians and Matiffs. That the mines in that settlement afforded very rich ore, which was taken away in large quantities, packed on mules, and had the same appearance of what we met with about the head branches of Red River. After furnishing ourselves with horses at this place, we sat off again for the Panis towns, from whence we started, steering at first southwardly, in order to avoid a high, mountainous country that is difficult to cross, that lies between Santa Fè and Red River. After travelling some distance south, we turned our course north-eastwardly, and arrived at the Panis towns in eighteen days from the day we left Santa Fè settlements, and three months and twenty days from the time we started.

“ He is of the opinion that from the Panis towns to Santa Fè, in a right line, is nearly three hundred miles, and all the country prairie, a few scattering cedar knobs excepted. After he had finished his narrative, I asked him how far Red River was boatable. He said, not much above the Panis old towns; not that he knew of any particular falls or obstructions, but that the head branches of the river came from steep mountains, on which the rain often pours down in torrents, and runs into the river with great velocity, sweeping along with it large quantities of loose earth, of which these hills and mountains are composed; that it rolls like a swell in the sea, and would either sink or carry along with it any boat that it might meet in the river. But, he observed

at the same time, that his opinion was founded on no experiment that he had ever known made. I asked him if the Indians had no perogues high up in the river. He told me, that the Indians there knew nothing of the use of them, for instead of there being for hundreds of miles a tree large enough for a canoe, one could scarcely be found large enough to make a fowl trough. I asked him what animals were found in the great prairies. He told me, that from Blue River, upwards on both sides of Red River, there were innumerable quantities of wild horses, buffaloe, bears, wolves, elk, deer, foxes, sangliers or wild hogs, antelopes, white hares, rabbits, &c. and on the mountains the spotted tyger, panther, and wild cat. He further told me, that about twenty-three years ago he was employed by the Governor of St. Antoine, to go from that place into some of the Indian nations that lived towards Santa Fè, who were at war with the Spaniards, to try to make a peace with them, and bring in some of the chiefs to St. Antoine. He sat off from that place with a party of soldiers, and was to have gone to Santa Fè; they passed on a north-westwardly course for about two hundred miles; but after getting into the Great Prairie, being a dry season, they were forced to turn back for want of water for themselves and horses, and that he does not know how near he went to Santa Fè, but believes he might have been half way.

“The accounts given by Mr. Brevel, Mr. Grappe, and all other hunters with whom I have conversed, of the immense droves of animals that, at the beginning of winter, descend from the mountains down southwardly, into the timbered country, is almost incredible. They say the buffaloe and bear particularly are in droves of many thousands together, that blacken the whole surface of the earth, and continue passing without intermission for weeks together, so that the whole surface of the country is, for many miles in breadth, trodden like a large road.”

The Red River is computed to run a distance of one thousand eight hundred miles and more, between its source in the mountains, and the place where it joins the Mississippi. It is believed that formerly it found its way to the gulf of Mexico, without mingling its waters with the Mississippi at all. The supposed old channel of the Red River is what is now called the Achafalaya. This is at present one of the outlets through which the water of the Mississippi reaches the sea. And there is reason to believe the Mississippi, in remote former days, ran much farther to the east-

ward, but, at some subsequent time, changed its channel so far to the westward, that it fell in with the Red River, and bore it away by its superior force. Hence it happens that the Achafalaya, which was formerly the main channel of the Red River, is at present only one of the outlets through which the Mississippi communicates with the gulf below.

The remaining and last piece is an abstract from Dunbar and Hunter's expedition to the Hot Springs on the Washita. But as a full account of this, extracted from their manuscript journal, has already been laid before our readers, in our last volume, p. 305, we consider it unnecessary to repeat what was then offered.

ART. 2. *The AMERICAN GARDENER'S CALENDAR; adapted to the Climates and Seasons of the UNITED STATES; containing a complete Account of all the Work necessary to be done in the Kitchen-garden, Fruit-garden, Orchard, Vineyard, Nursery, Pleasure-ground, Flower-garden, Greenhouse, Hot-house, and forcing Frames, for every Month in the Year; with ample practical Directions for performing the same: with minute Instructions, and extensive Catalogues, &c. &c. By BERNARD M'MAHON, Nurseryman, Seedsman, and Florist. 8vo. pp. 648. Philadelphia. Graves. 1806.*

THE inhabitants of the American States have ever been in want of a practical and ample book of directions for the gardener. For, although several attempts have been made to compile such a work, they have been considered as defective in various respects, such as being too local in their instruction with regard to climate and situation, too limited in respect to the subjects treated of, both as to number and extent, or being copied from foreign publications, and of course miserably adapted to such a country as ours.

Their increase of wealth leads to improvements in horticulture. The cultivation of estates is more diligently pursued. It becomes less an object to till in a neglectful manner a large tract of land, than to improve to the best advantage a few acres. Every year's experience affords additional proof of the old truth, that great land-holders are bad improvers. In many of our Commonwealths, the laws are favourable to the subdivision of real estates. This partition of the fields among

the children of a proprietor has an admirable tendency to make them industrious, and to render them good economists. And this is carried so far, that a grandson, or great-grandson, at the present day, raises more produce, lives better, and makes a much greater profit upon one-fourth of the land once occupied by his ancestor, than his forefathers did upon the whole and undivided tract. And what is very remarkable, under the preferable modern management, the selling value of one of these fractional parts at the present day, is greater by far than the entire parcel formerly was. Thus the general increase of wealth disposes more persons to become freeholders, encourages the partition of great landed estates, and enables every purchaser to employ, on his own spot, more capital, industry, and skill.

The growth of cities and villages tends exceedingly to promote gardening, as well as agriculture in general. The demand for the productions of the Flower-garden, Kitchen-garden, and orchard, is enormous and increasing. The occupation of the gardener and nursery-man becomes more important. When spinach, parsley, potatoes, onions, and even turnip-tops and cabbage-sprouts can be sold for ready money, the cultivation of a garden becomes a valuable object. The price paid for lilies, larkspurs, roses, pinks, even for the stems of asparagus, and of the bay, for every gay or green twig that will adorn a hearth or chimney-piece, or look fine as a nose-gay, encourages the rearing of ornamental plants, and the bringing them to market. So, when each owner of a farm, or country-seat, however small, adds fruit-trees and forest-trees to his other improvements, the man who raises them from the seed, or who prepares them by grafting and inoculation, finds his business to be both brisk and profitable. In like manner, when curiosity and taste unite to naturalize an exotic plant, and to reconcile it to our soil and climate, the professional gardener understands better than any other person the modes of effecting such desirable changes, and finds his reward in so doing. The state of the markets, and the value of land in the vicinity of New-York, Philadelphia, New-Haven, Boston, and Baltimore, amply evince the correctness of this reasoning.

Manufactures also promote the agricultural arts. When a country is agricultural, and employs no more hands than are necessary to raise its raw materials, there is commonly a residue for exportation; and this surplus of provisions and necessaries for the support of man, is sent to foreign coun-

tries to feed their manufacturers. In return for these, the wrought materials of those regions are brought back for domestic consumption. But when a country that is agricultural becomes likewise the seat of manufactures, there is a body of people immediately formed, who consume food without labouring to raise it. These artizans, who eat up the products of the surrounding farms and gardens, pay for them in the fabrics and wrought goods which they prepare, and, by the natural operation of these two species of industry, land, and such of its productions as serve for food to man, rise in demand and value around manufacturing villages. Our citizens are progressing rapidly in manufactures. We are already extensively engaged in working up raw materials into wrought forms for our own consumption. In proportion to the embarrassments which foreign nations lay in the way of our commerce, will these manufacturing efforts be increased. In the same degree will our national independence be promoted; and in an equal proportion will gardening and agriculture generally be benefited and encouraged.

Refinement of manners, and the corresponding elegance in domestic economy, have a powerful tendency to encourage the arts of the gardener, nursery-man and florist. A greater quantity of vegetable food is consumed. A more ample variety is demanded. Pot-herbs, sallads, roots, flowers, fruits, and every production that can gratify the palate or the eye, are bought with greater avidity. And the cultivator finds an adequate incentive to his exertions, in proportion to the prevalence of these meliorating changes in society.

These circumstances would seem to be very favourable to such a publication as Mr. M'Mahon has made. He has presented it to the public under good auspices; and we join the sons of the pruning-hook and the plough-share, in giving it a welcome reception. If we are not mistaken in our judgment, it will be an useful book of direction and practice for the gardener of the middle and northern States. Being written for the climate of Philadelphia and its vicinity, the times of performing each kind of work may be easily adapted to every other region, whether situated nearer the Floridian or Canadian frontier, whether lying to the eastward near the ocean, to the westward on the mountains, or on the hither or further side of them. An addition of eight days will accommodate the work to the later vegetation at New-York city. There is about an equal number to be sub-

tracted for the purpose of adjusting it to the city of Washington, and so on of other places, which a little observation will ascertain.

The book is much larger than the common size of octavos. It consists of nearly six hundred and fifty pages of letter-press, besides the title, a concise preface, and a copious index. The author has really done justice to his readers, by giving them sheets well filled, and types of neat and moderate size. They will have no reason to complain of scarcity of matter, for he has poured out his information with liberality, if not with profusion.

Mr. M'Mahon has parcelled his work into twelve great divisions. These correspond to the months of the year. In each he prescribes the work to be done, and the way of doing it. In this manner he has constructed a Calendar, beginning with January, and proceeding regularly to June, and thence forward to December. By attending to this arrangement, the person who consults the volume can readily find the months, by casting his eye to the top of the pages, and below them the labour and preparation during each.

Besides this distribution of his precepts and directions, according to the sun's place in the zodiacal signs, the author has made a methodical disposition of the business of every month. The operations in the kitchen-garden, fruit-garden, orchard, vineyard, nursery, flower-garden, green-house, and hot-house, are placed under distinct heads; and it is easy to find under one or another of these titles, whatever the Calendar contains for all the months of the year. By adverting thus to a division of his publication, into twelve parts or months, and these again into a subdivision of each into eight sections, Mr. M. has rendered it very easy to find any thing it contains. And, by attending to this, it is scarcely more difficult to examine the directions for the pleasure garden in September, the orchard in March, or the hot-house in December, &c. &c. than to search for a word and its correlatives in the Encyclopædia, or to examine passages in the Bible by aid of a Concordance.

The reader is not to expect that the work should be wholly original. The author does not pretend to this. A candid acknowledgment is made, that in writing the treatise, he consulted the best publications in the American States, and in the transatlantic countries, especially those extant in the English, French, and Latin tongues. To bring into one

compendious tract the information scattered in many books, composed in different languages, hard and costly to procure, laborious to examine when procured, and requiring more literature than falls to the lot of the great body of cultivators, is a very laudable and useful undertaking. Our fellow citizens, we confidently believe, will concur with us in opinion, that he has done them worthy and acceptable service. He is perfectly aware that in some cases he may be mistaken, and in others may have made omissions; and these he is ready to amend as soon as they shall be discovered. But he has employed a good share of judgment in the directions he has given for the rearing of thorn-quicks and other plants for live fences; for cultivating liquorice, manna-ash, and rhubarb for medicines; planting madder and weld for dyeing; cork tree, fuller's teazel, tanner's-sumach, and paper mulberry for the economical arts; sea-kale for the dining-table; grapes for the preparation of wine; and mulberry trees and insects for the manufacture of silk. And, in addition to all his knowledge derived from preceding authors, Mr. M. lays claim to the attention of his readers, by the experimental skill derived from a large and extensive course of practical gardening, pursued for almost thirty years.

If he had merely displayed the stores of study and observation collected during so long a term, it might be considered as a sufficient apology for addressing the public. But Mr. M. has done more. He has tinctured the gardener's art with botanical science. If you believe him, Ceres, and Flora, and Pomona, have all studied modern classification, and become acquainted with the Linnæan system. And we expect to learn in his second edition, that Pan, Vertumnus, and all the more exalted deities of the fields, have become proficient in the same fascinating doctrine. But to descend from the metaphorical style, there is subjoined to the Calendar a general catalogue of those vegetables with which man is most conversant, and which it more particularly behoves him to know. The great value of this consists in its exhibiting both the ordinary and scientific names, in distinct lists, and in alphabetical order. The sections into which the general Catalogue is divided, are the following: 1. Botanical and common names of kitchen-garden esculent plants and herbs. 2. Aromatic pot and sweet herbs. 3. Plants cultivated for medicinal purposes. 4. Select fruit trees. 5. Hardy deciduous trees and shrubs. 6. Hardy ever-green trees and shrubs. 7. Hardy bulbous and tuberous-rooted flowering

plants. 8. Hardy annual flowers. 9. Tender annual flowers. 10. Hardy aquatic herbaceous perennial plants. 11. Green-house trees and shrubs. 12. Green-house succulent and herbaceous perennial and biennial plants. 13. Green-house bulbous and tuberous-rooted plants. 14. Hot-house trees, shrubs, and succulent plants. 15. Hot-house herbaceous perennial plants. 16. Grasses, and other plants used in farming. 17. Hardy perennial and biennial fibrous rooted flowering plants. 18. Hot-house bulbous and tuberous rooted plants. Under these eighteen heads he has given the names of near three thousand seven hundred species and varieties of the most valuable and curious plants hitherto discovered.

The advantage of such a methodical enumeration of these natural productions to the individual horticulturist, is sufficient to demonstrate its value. The importance of it is, however, increased by the clearness and certainty which it enables the cultivator to give to all the publications and communications of every kind which he may make. And, in addition to these, great facility is afforded to botanical researches, and much embarrassment and labour saved to beginners, by the inspection of a correct and extensive catalogue like this. To those who have not in their libraries Mr. BRYANT's *History of esculent plants*, this will be a good remembrancer; and for those who have, it will be extensively useful, by the additional and rich variety which it contains.

As specimens of Mr. M.'s performance, we would recommend the perusal of his remarks on eight species of *Cratægus* or hawthorn, for live fences, and the method of raising them from the seeds (p. 144 to 149), and the continuation of the subject, from p. 252 to 261, with considerations on the fitness of *crab-apple*, *hornbeam*, *beech*, *gleditsia*, *elm*, *holly*, *white-mulberry*, *Lombardy-poplar*, *juniper*, *red cedar*, *yew*, *privet*, *eglantine*, *elder*, *willow*, and several other plants for the purpose. We also point out, for the sake of evincing the detail and extent of his knowledge, the observations on the hot-house, from p. 84, to p. 99; and the sequel of them, with further directions on their management, particularly in respect to pine-apples, and the insects which infest them; and remarks on the other creatures that devour hot-house plants of that class, such as the *Aphis*, *Acarus*, *Thrips*, *Oniscus*, *Formica*, and *Coccus*, with the method of destroying them, from p. 160 to 168; and further observations on the varieties of the *Bromelia*, &c. p. 445 to p. 450. But our

readers are doubtless desirous, by this time, of seeing an extract in his own words, and judging for themselves; but our limits forbid us, or we should have given them his account of the *Crambé Maritima*, from p. 191 to p. 195.

We were pleased to find that the American plants which beautify the woods, fields, and swamps, had not been overlooked or neglected by our author. Many of them are duly noticed, and the cultivator's attention called to them among the instructions for the flower-garden in the month of August. And we were gratified also with a piece of convenient economy, by substituting oak leaves newly fallen in autumn, instead of tanner's bark, as described in the section which relates to the hot-house department for October.

But we forbear any further comments or criticisms. A book of such great extent, and various contents, cannot be easily analyzed in a general way further than we have gone. And to proceed more deeply into particulars would be inconsistent with our plan and limits: we therefore observe, that as the taste for gardening is increasing, and the appearance of the book is opportune, we expect it will be sought with avidity, and thereby become the incentive and the guide to capital improvements in that interesting art. And we shall be disappointed, if nursery-men, florists, and gentlemen of taste, leisure, and fortune, do not add to their libraries, however select and small, *M'Mahon's American Calendar*.

By this time, however, it may be expected, that as impartial reviewers, we should point out the weak and faulty parts of the work; but, on this point we observe, that we take no pleasure in exhibiting blemishes or defects. We love to make the best of every thing we take in hand. And, therefore, as to the mistakes or redundances, or repetitions with which some persons have charged it, we observe in the words of the great Roman critic—

Sunt delicta tamen, quibus ignovisse velimus—

*— Verum ubi plura nitent in carmine, non ego paucis
Offendar maculis.—*

ART. 3. *Notes on the West-Indies, written during the Expedition under the Command of the late General Sir Ralph Abercrombie, &c. &c. with occasional Hints, regarding the seasoning or Yellow Fever of hot Climates. The Author, George Pinckard, M. D. Deputy Inspector-general of Hospitals to his Majesty's Forces, &c. 3 vols. 8vo. London. Longman and Co. 1806.*

WHEN the British concerted their expedition in 1795, against the Dutch settlements at Essequibo, Demarara, and Berbice, in Guiana, and against the French colony of St. Domingo, Dr. Pinckard was appointed an officer of the medical staff, and ordered to join the army. He proceeded by Southampton and Portsmouth to Spithead; and thence sailed to Barbadoes. He served during the campaign in that part of South-America: the troops were very sickly, and the yellow fever raged with its accustomed mortality among them. The author consequently had frequent and sad opportunities of witnessing it in its most acute and violent forms, and of experiencing a severe visitation from it in his own person.

Though his observations are expanded over three entire volumes, the greater part of them have no particular connection with medicine, or the physical sciences. They consist generally of sentimental details, philanthropic reflections, amusing anecdotes, and social recreations. In these is discoverable much of the entertaining manner of Dr. Moore, who understood remarkably well the art of writing agreeably, and of giving an interest to the levities of life. The author has not troubled himself with profound researches into natural history. Neither the animals of the ocean, nor the minerals of Barbadoes, nor the plants of Guiana, appear to have been very narrowly scrutinized by him; yet he has narrated his adventures like a man who possesses sense, taste, and politeness.

In his second volume, page 64, he tells how expert the negroes are in finding and extracting *chigoes* from the feet or flesh into which they may have insinuated themselves. These black surgeons extract the sac in which the insect and its brood settle with the point of a pen-knife or large needle; and then filling up the hole with a mixture of grease and caustic alkali, from the ashes of the pipe or cigar, the cure is speedily effected. In the 156th page he gives strong illus-

tration of the manner in which men on ship-board render their persons, and every thing about them, filthy and offensive ; and confirms the remark we have often enforced, that the dirty commixture speedily in hot climates *turns sour and fetid*. But his third volume contains an account of the yellow fever, which shows that Dr. P. conceives clearly, and writes ably upon a professional subject. His 39th letter to his friend, (p. 447), is expressly devoted to the discussion of this controverted subject ; and we should quote the whole, and insert it entire, if it had not lately been re-printed in the New-York edition of ASSALINI's celebrated work on the uncontagiousness of the plague, which is, or ought to be in the hands of all legislators and physicians. It is a picture drawn by a faithful and masterly hand.

ART. 4. *Voyage a la partie orientale de la Terre-Ferme, dans l' Amerique Meridionale, fait pendant les Années, 1801, 1802, 1803, and 1804, &c.* that is, *A Voyage to the Eastern Part of Terra-Firma, in South-America, during the Years 1801, 1802, 1803, and 1804 ; containing a Description of the Captain-Generalship of Caraccas, including the Provinces of Venezuela, Maracaibo, Varinas, Spanish Guiana, Cumaná, and the Island of Marguerite ; and comprehending all that relates to the Discovery, Conquest, Topography, Legislation, Trade, Revenue, People and Productions of these Provinces ; with a Sketch of the Manners and Customs of the Spaniards, and of the wild, and civilized Indians.* By F. DUPONS, *Ex-agent of the French Government at Caraccas. With a Geographical Map, and Plans of the capital Town, and principal Harbours.* 3 vols. 8vo. De Fain & Co. Paris. 1806.

FROM the jealous care with which Spain has watched over her American dominions, many of them are scarcely more known to the world at large than before the discovery, in 1492. Curiosity has been often awakened, though generally in vain, to learn more of their topography, natural history, state of population and improvement, their indigenous productions, and the new kinds of culture to which they are adapted. At distant and irregular intervals, indeed, gleams of knowledge are discernible ; but these are mostly derived from foreigners who have had address enough to penetrate

those unsocial regions, and very seldom from the natives, or the government to which they belong.

Hence it has happened, that the information is extremely scanty concerning some of the oldest colonies formed by the Europeans in America. When, therefore, a book is published by a respectable traveller, concerning any of these forbidden and recluse dominions of his Catholic Majesty, it is read with an eagerness scarcely less than if it related to discoveries of islands at the antipodes, or of new nations in the internal parts of the three great continents.

The publication of Mr Dupons comes forth at a very seasonable time. A military expedition which, contrary to the laws of the United States, and the prohibition of their government, was secretly planned at New-York, and carried into operation in February, 1806, is avowed by those who have engaged in it, to intend a revolution in Caraccas. The political proceedings at Washington, and the judicial decisions at New-York, on this unwarranted and hostile outfit of a Spanish adventurer, from a neutral port, has excited great sensation as to the result of his enterprize. Every person who reads the Gazettes, and discourses about the news of the day, has a desire to become better informed as to the country about which there has been so much discussion and expectation. He wishes to enlarge his knowledge of its rivers and harbours, its mountains and plains, its people and resources, its climate and fitness for the habitation of man. All this and more he may derive from the work now under consideration. There it is declared, that there is no part of America to be compared with this *eastern part* of Terra-Firma, or the Captain-Generalship of Caraccas, for the fertility, variety, and richness of its productions. This excellent, and almost unequalled tract of earth, is described as lying between the twelfth degree of north latitude and the equator, and between the sixty-second and seventy-fifth degrees of west longitude from Paris. Within these limits are included the provinces of Venezuela, Varinas, Maracaiibo, Cumana, Spanish Guiana, and Marguerite island. And they are hereby clearly distinguished from *western* Terra-Firma, which depends upon the vice-royalty of Santa Fè, and is bounded on its northern side by Cape De la Vela on the east, and the isthmus of Darien on the west.

Mr. D. landed on the shore of the vast and superb regions he describes on January 18, 1801. From St. Domingo he had been patronized and encouraged by General Le Clerc;

but the death of that officer soon terminated their advantageous connection. The author, however, had address enough to prolong his stay in the country, by cautiously avoiding every word and act which might encounter ancient prejudices, violate modern usages, or contravene local customs. By such accommodating manners and winning arts, he softened the rigour with which Spanish policy thrusts away all persons who had not a birth-right within the dominions of their king. He overcame the suspicions usually raised against foreigners, and forbidding them to travel through those secluded tracts, except by the express order of his Majesty, which is always difficult to procure, and then only for the purposes of natural history. And, by these means, he was enabled, after gaining the good will of the Governor, the Bishop, and the Intendant, to explore one of the most inviting tracts of the globe, but which had been neglected or viewed with an eye of indifference by the Spaniards, on account of its having no mines of gold and silver worth the working.

The first volume contains a critical and explanatory introduction and four chapters. The first of these treats of the slow conquest and settlement, owing to the greater attraction of emigrants to Mexico and Peru than to Caraccas, on account of their metallic treasures. In the second there is a brief description of the country, such as it was when the Spaniards invaded it. The population, both European and African, is examined in the third; and the fourth is wholly devoted to the Indians, whose manners, customs, superstitions and peculiarities are discussed at considerable length.

Terra-Firma was discovered by Columbus in 1498, on his third voyage from Spain to America. He fell in with the Dragon's Mouth, between Trinidad and the continent, and coasted westward as far as Point Araya. He was followed by Ojeda and Vespucci, in 1499. Ojeda sailed along the coast to Cape Delavela. Amerigo Vespucci, on returning to Spain, had the cunning to persuade the court, that Columbus had discovered islands only, and that the continent was first found by himself. On this they called the new world America, in honour of him. Soon after Spanish trading vessels visited the coast, and some of them made great profits.

The two crowns of Castile and Arragon had been united by the marriage of Isabella, queen of the former, to Ferdinand, king of the latter. The king of Spain was not the

active favourer of Columbus. He would not subscribe any articles, as king of Arragon, with the American adventurers. This was done by the queen alone, and Isabella, in her royal capacity, as sovereign of Castile; from her own funds advanced the money for equipping the voyage. On this account it happened, that for a long time the ports of America were open to the Castillians, as subjects of the queen, but shut against the Arragonese, the subjects of her husband. So nice a construction of title as this between man and wife led both Ferdinand and Isabella to wish a better claim than they had acquired by mere discovery. The easiest way that occurred of solving their doubts, and quieting their consciences, was by an application to the supreme head of Christ's visible Church on earth. They promised the Pope to propagate the Christian faith in the new discovered countries, and to bring them and their inhabitants within the pale of the Church. In consequence of this, Alexander VI. confirmed by a bull, the petition of their Catholic Majesties, and conquests were afterwards regarded less in the light of military expeditions than crusades. And in dealing with the Indians, the system pursued by the Spanish monarchy has always ostensibly been, not to employ force for their subjugation until moral and persuasive means had failed; it being ever professed that it was better to make them Christians than vassals.

In virtue of this agreement between the discoverer, his two Sovereigns and the Pope, Columbus brought over with him missionaries to St. Domingo, to sow the first seeds of the true faith. But in the beginning, and almost ever since, these ministers of God and peace were almost incessantly thwarted by the civil and military authority, acting under the thirst of gold, and influenced by sordid and worldly motives. Two of these missionaries were sent to Cumana in 1512. They were progressing rapidly with the natives, but were, at length, shockingly murdered by them, to atone for the infamous piratical and traitorous conduct of some of their own countrymen, the Spaniards, on the coast. After this, there was a cessation of intercourse for several years, until in 1516, several Dominican priests ventured over to the main from the isle of Cubagua. They were, however, almost immediately killed, and eaten by the cannibals whom they went to convert. Notwithstanding these murderous scenes, other missionaries engaged almost instantly in the

same laborus, and for two years and a half carried on the business of conversion with great success. Churches were erected, savage manners were disappearing, and commerce thriving along the coast; when, in 1519, all of a sudden, without any quarrel or warning, the Indians fell upon the priests at mass, killed a part of them, set fire to the religious houses, and obliged the surviving missionaries to flee for their lives to Cubagua.

The audience of St. Domingo, hearing how badly religion and commerce prospered in Terra Firma, soon ordered a military expedition to quell the ferocious spirit of the natives. It consisted of three hundred men, commanded by Ocampo. Having succeeded in punishing the ringleaders of the late atrocious acts, he fixed himself on Cubagua; and, by repeated incursions into their country, kept the Indians in awe. Finally, they concluded a peace with him, and suffered him to found the city of Cumana. Just at this time Las Casas, the Indian-made bishop, arrived at Cumana from Spain, with a reinforcement of men, and certain new orders from king Charles. To these orders Ocampo refused to submit. Las Casas quarrelled with him, and went to St. Domingo to enter an accusation before the grand audience there. Ocampo followed, and his adherents soon abandoned the settlement, and went back after him. In the mean time the Indians, taking the advantage of the existing distractions, massacred the remains of Las Casas's followers in the night, with few exceptions, and broke up the settlement. They exterminated all the Spaniards they could find on the coast. The survivors fled to Cubagua.

The second military expedition was in 1523, from St. Domingo, under the command of Castellon. He intimidated the Indians, went on with the buildings of the town, and restored the pearl-fishery, which had been almost discontinued in consequence of the disasters at Cumana. The Spaniards, however, for a long time, did no more than maintain their position, for such was the martial and hostile temper of the natives, that no great or lasting impression was made on them before 1656.

The third outfit from the mother-country was in 1527. Ampues sailed with a small body of men for the continent, and made a settlement at Coro. He was a man of humane, just, and comprehensive views. He had suppressed piracy, conciliated the friendship of the natives, and was proceed-

ing rapidly to annex Venezuela, by gentle means, to the Spanish crown, when his fair and promising plans were frustrated by a cruel and unprincipled act of his Sovereign.

Ferdinand was now dead, and his son Charles wielded the Spanish sceptre. This Prince of the united kingdom of Arragon and Castile had likewise been dignified by the Imperial crown of Germany. It was the lot of this Emperor, Charles the Fifth, in addition to his imperial and royal cares in Europe, to superintend the discoveries and conquests made by his subjects in America. In the expensive projects which Charles undertook, it was his fortune to be often in want of money, and be obliged to have recourse to loans. Among his other creditors was the rich house of Welsers, merchants at Augsburgh, in Germany. They had advanced to their sovereign large sums, which he was unable to repay. Amidst the straits to which he found himself reduced, he conceived the project of paying this debt of the Emperor by a grant of part of the usurped or pretended dominions of the King. He committed an act which ought for ever to have covered him with guilt, shame, and penitence. The province of Venezuela, in Terra Firma, was granted by him to the Welsers, as an hereditary fief of the crown. It reached on the Caribbean sea from Cape de la Vela to Maracapana, and extended indefinitely towards the south. The auspicious beginnings of a government in concord and happiness, under Ampues, were blasted, and a horrid system of oppression and violence was authorized under a mercantile company. The conditions were, 1. That the company should, in two years, found two towns, and three forts. 2. It should arm four vessels, to transport three hundred Spaniards, and fifty German mine-masters, who were to travel through all the Indies, at the expense of the company, and work mines for its benefit. 3. The Emperor granted the title of Adelantado to the person whom the Welsers should nominate. 4. He gave them four *per cent.* out of the fifth coming to the crown, of the mines they should work, and an extent of twelve square leagues of land in any part of the conquered regions they should choose. 5. He gave them the *privilege of enslaving the Indian who would not yield to other means than force.* None of these conditions were executed except those which favoured the Germans, especially the fifth, which was carried into effect with unrelenting fury.

By this commercial speculation, the avarice of the gran-

tees was to be satisfied at the expense of the distant and unconscious natives of Venezuela. The administration of the powers contained in the patent was given to the unfeeling and barbarous German, Ambrose Alfinger, and to his Deputy-Governor and countryman Sailer. They arrived at Coro, with 400 adventurers, in 1528. Ampues surrendered his authority to Alfinger, without hesitation. The new Governor immediately inquired for gold, precious stones, pearls, and the materials for a sudden augmentation of wealth. But finding they were scarce, and that there was no prospect of enriching himself and associates by the acquisition of such articles, he, in a fit of rage and disappointment, determined to march into the country sword in hand, and get what he could by plundering the Indians of their effects, and by selling them for slaves. After campaigning three years, and practising all the violence of a robber, thief, tyrant and butcher, around the lake of Maracaibo, and losing many of his followers, he was at last, in 1531, killed by the Indians near Pampeluna. This monster was succeeded by John the German; who, disliking such cruel and unprincipled proceedings, never quitted Coro. His companions, however, pursued Alfinger's plan of making conquests, as they called them, though they were nothing more than excursions for spoil. In 1533 the Welsers sent out George Spira as Governor, with 400 men, half Spaniards and half Canarians. On their arrival at Coro, they immediately formed a coalition with the resident robbers, and dividing themselves into three bands, marched forth to lay waste and plunder the country. The expedition lasted five years, when Spira returned to Coro with only 80 men out of the 400 who had gone out with him. He died there in 1540. That same year the audience of St. Domingo appointed the hard-hearted and blood-thirsty Bastidas, Bishop of Coro, to be Governor. This wicked prelate, and his Lieutenant, Urre, plundered and enslaved the natives as outrageously as any of their predecessors had done. The latter of these gold-hunting commanders, after a severe and distressful peregrination of four years, was killed on his return by one of his officers. This officer was in the interest of one Caravajal, who determined to usurp the government of Venezuela by the death of Urre, after Bastidas, the Governor, had been translated to the episcopal see of Porto-Rico. Under this usurper the town of Tucuyo was founded in 1545; and is the only establishment or improvement made in the province while it groaned under the monopoly and

tyranny of the Welsers. At length the Emperor, hearing how these men abused their power, and were spreading desolation wherever their agents went, abrogated the grant he had made them, resumed the authority to himself, turned the Germans out of office, and appointed John Tolosa, a Spaniard, to be Governor; under whose administration an alteration for the better almost immediately took place. One great feature of the new regulations was, that the Indians should be considered free, and under the protection of the inhabitants and the laws.

But during the reign of the Welsers and their agents those natives had conceived a horror and hatred of the Spanish name that could not be forgotten nor reconciled. Their aversion was implacable; their distrust unlimited. The experience of 15 or 20 years had convinced them that the white emigrants intended nothing less than to exterminate them, and grow rich by their spoils. This sentiment was so deeply fixed that nothing could eradicate it. The Indians have therefore been generally hostile and obstinate. They have opposed the Spaniards foot by foot as they penetrated the country. And this is a principal reason wherefore the conquest and settlement proceeded much more slowly here than in most of the other provinces. In those fierce and reiterated conflicts a great deal of Indian and Spanish blood has been spilt.

In proportion as the emigrants beat the natives off, they founded successively the towns of Barquisimeto, Virgua, Valencia, Truxillo, Caraccas, Maracaibo, Carora and St. Sebastian de los Reyes. The latest of these was as long ago as 1585.

Such is the outline we have traced from the publication of Mr. Dupons, of the settlements of the eastern part of Terra Firma. Our readers will, nevertheless, be pleased with the account he gives of the conquest of Caraccas, a place famous for achievements of war long before the end of the 16th century. Of all the parts of Venezuela this spot was the most populous. Its native inhabitants possessed the most address, resolution and love of independence. In a circle of about 12 leagues there lived nearly 150,000 Indians, under the rule of thirty caciques. The fertility of the soil in the valley of Caraccas and its numerous population had long tempted the cupidity of the Europeans, but they were obliged to fight very hard battles before they acquired possession of it.

The original enterprise was undertaken by one Faxardo,

a half-breed, born at Marguerite, of a noble Spanish father and Cacique mother. Sprung from the Indian blood, and understanding several of their languages, he went over to the main on a visit to his native relations and countrymen. He landed fourteen leagues to the windward of Lagoayre (Laguira), and was received with unbounded confidence and applause. He, however, returned to his mother in Marguerite, and told her so pleasing a story of the conduct of the natives and of the vale of Caraccas, that she determined to accompany him in his second trip. She was received with great gifts and honours, and settled in the vale of Panicello, which they presented to her. In the mean time Faxardo was engaged in soliciting leave from the Governor, Gutierrez, to build a town. Having obtained permission from the Spaniards, he next applied to the Indians; but to his surprise, he found from that moment they looked upon him with suspicion and distrust. They took up arms, and poisoned the waters. His mother died during these commotions, and Faxardo himself, after losing all his adherents, was glad to escape with his life to Marguerite. Thus ended his second expedition. But this did not discourage him from making a third attempt. This, however, was only a display of rashness, wherein, after having been made a prisoner, he by most unaccountable skill and management prevailed on his enemies to release him unhurt. Then he cultivated their friendship, formed alliances with them, and entered into trade; but not being able to overcome or efface the unfavourable opinion they had formed of him, he retired to the seashore in 1560, and began a town at the Port of Caravellada. He afterwards discovered a gold mine in the valley of St. Francis, and sent samples of its produce to Governor Colorado. This was his ruin. For the envious, jealous, and avaricious Spaniards all conspiring against him, he was stripped of his command as Lieutenant-General, and banished to the town he had founded.

Peter Miranda succeeded Faxardo. After various struggles and battles between the natives and the invaders on the subject of working this gold mine, in which the latter were repeatedly driven off, the Spaniards at length received sufficient reinforcements to hold their ground, and to build a village of a few miserable huts on the very place where Caraccas has since been built.

While these events were passing, there arrived at Borburata, a fellow named Aguirre, with a band of 300 men,

whom he commanded. They had started from Peru, on a journey of discovery in the interior. Having murdered their legitimate commander, they had proceeded down the river Amazons to the ocean, and thence to Marguerite. From this island they steered for Terra Firma, in hopes of conquest, plunder, or almost any kind of mischief; for they were nothing better than robbers and murderers. From the place of their landing they marched to Valencia, killing one another when they had nobody else to destroy.

The forces of government were called off from the war against Caraccas, to quell this rebel. He was, at length, killed at Barquisimeto. But as the post of Caravellada was weakened by the detachment of troops sent against this common enemy, the Indians attacked it with great violence, and drove Faxardo, after a valiant defence, once more to Marguerite. Here this persevering man formed a fourth expedition. He landed with his party at Cumana, where, through the most atrocious perfidy of the Governor, Cobos, the enterprising, indefatigable, and accomplished Faxardo, was seized and strangled.

At length, in 1565, during the administration of Governor Bernaldes, General De la Penna undertook the subjugation of this envied region. But marching towards the place, the natives were found to have assembled in such formidable numbers that it was judged most prudent to retire. The work, however, was resumed in earnest, by Governor Ponce de Leon, who, pursuant to instructions from the king, formed an expedition, and gave the command to General Losada, in 1567. The natives opposed him with all their forces. They engaged him hand to hand, they set fire to the woods, and attempted his destruction by ambuscades, posts, and all the means in their power. Losada fought his way to the valley of Caraccas, overcame the natives in several other battles, and, finally, laid the foundation of the present city of Caraccas, which he called *Santiago de Leon de Caraccas*. Yet, after all this, the Indians were so brave and hostile, that more than ten years elapsed of hardy warfare before they could be quelled.

In the year 1797 an attempt was made to revolutionize Venezuela. The authors of it were three exiles from Spain, who had been sent to Lagoayre as state prisoners, for having been too favourable to the French revolution. These men won over their keepers, engaged other persons in their schemes, extended their influence from the place of their

imprisonment to Caraccas, and expected to have established a republican government throughout the province; but the persons who engaged in it were not numerous; they did not exceed seventy-two. The chief conspirators were suffered by their keepers to break prison, and make their escape to the English islands. Their principal associates were arrested, and seven of them punished with death; thirty-three sentenced to the galleys, or to temporary confinement, and thirty-two were sent to Spain to abide the king's pleasure. Among those who were publicly executed was the Corregidor of Macuto. During these proceedings, the great body of the people were very supine and indifferent. They seemed to feel very little of the revolutionary or republican spirit.

In the chorography of the second chapter, Mr. D. describes the mountains as generally habitable, and cultivable almost to their summits. There can be no plainer proof of their moderate elevation. This may be judged of by the fact, that the most lofty peak of Pichaco, near Caraccas, is no more than 1278 French toises above the level of the sea, and Tumeriquere, the most elevated near Cumana, is only 935. It hence appears that almost all the mountains and soil is good for something. There are no mines of silver or gold worked there at present. From this happy circumstance, the people are taught to depend upon their labour and skill, by cultivating their excellent soil in their exquisite climate. But there is a copper-mine of great value worked within the jurisdiction of St. Philip. The pearl-fishery, which, in the infancy of the settlement, was followed with great zeal, is now wholly discontinued. From diving for pearls, and groping for gold, the wiser inhabitants have turned their attention to the cultivation of the earth. All the northern part of the province furnishes abundance of salt. Earthquakes sometimes happen, but are more alarming than mischievous. The forests abound with inexhaustible stores of wood for carpenters, wheelwrights, joiners, dyers, and druggists. The lakes of Valencia and Maracaibo are large and curious collections of water. The rivers are not navigable to any great distance. Of the harbours, that of Maracaibo is obstructed by a bar, over which none but small vessels can pass. Coro is open to the north and north-east, and is therefore exposed to the storms. The anchorage is good; though there is so little business done that it is very little frequented. Porto Cabello is the finest harbour in America, says Mr. D. The whole Spanish navy might anchor in it at once. It is land-

locked and sheltered from all winds, even the north-east. It is convenient and safe, as well as spacious and beautiful. Lagoayre, (Laguira) though the most frequented, is the worst along the coast. It is open, exposed, and tempestuous. The incessant agitation of the road makes loading and unloading tedious, expensive and difficult, and sometimes impossible. The sand works so at the bottom, as to bury anchors, and render it impracticable to weigh them, unless they are raised once a week and dropped anew; and, in this port, the pipe-worm is more destructive to ships than in any other in these parts. In the gulf of Cariaco, near Cumana, there is safe anchorage in a sheltered port, and very deep water. The gulf of Paria, which is situated between Trinidad and Terra Firma, is very particularly described, and stated to be one of the finest harbours in the world for extent and goodness. In this gulf there is a lively tide, while along the coast to the westward there is little or none.

In this land of promise, all tropical productions are more abundant, and of better quality, than in the Antilles. Cocoa, indigo, tobacco, sugar and coffee are mentioned in support of this declaration. This is highly encouraging to planters and settlers. And their encouragement will be the greater when they learn that vanilla, cochineal, dying woods and barks fit for all colours, medicinal gums, resins, oils and balsams, with almost numberless articles for the *materia medica*, timber for the most elegant cabinet-work, hides, beef and tallow from the wild cattle, horses and mules running wild in the woods, with plenty of sheep and deer, offer to industrious cultivators and rural economists, endless sources of wealth. And how is this picture improved to the eye of the longing emigrant by the reflection that in all the provinces of this Captain-Generalship, there is less than one million of inhabitants (728,000) in the whole! Of these two-tenths are white; three-tenths slaves; free negroes and their descendants four-tenths; and the rest are Indians. Of these inhabitants 500,000 belong to Venezuela, 100,000 to Maracaibo, 80,000 to Cumana, 34,000 to Spanish Guiana, and 14,000 to Marguerite. In such a fertile country there must be room and subsistence for an incomparably greater population; Mr. D. thinks an hundred fold.

In the third and fourth chapters, the author has given much information concerning the inhabitants, as consisting of whites, blacks, mulattoes and Indians. Many curious particulars are contained in them on the policy of Spain with

her colonies, and with the African slaves; and some pertinent remarks by the Lycurgus of Caraccas, Dr. Sanz; the Valencian, on a plan of education for the Creole youth of Venezuela. All these will be read with interest and instruction by those who recollect that this is the first publication of importance that has ever been made concerning a district of America, of which, though lying within a few weeks sail of our shores, and possessed by a Christian nation for about three hundred years, we know scarcely any thing more than we do of Africa or New-Holland.

The civil and military organization, both of royal troops and militia; the religious establishment of ecclesiastics, regular and secular; agricultural affairs, the tenure of estates, and the cultivation of land; and commercial transactions, as well lawful as contraband, are detailed with the minuteness of apparently actual knowledge and observation, in the fifth, sixth, seventh and eighth chapters. Our limits only allow us to state that an estimate of the finances, a description of the towns and their dependences, and an account of the hitherto undescribed territory of Spanish Guiana, are among the topics discussed by Mr. D. in the remaining chapters of this highly important work. We observe, with regret, that the author seems to have been very neglectful of botanical, chemical, mineralogical, geological, and medical facts. But as he appears to be a merchant and a man of ordinary business, ignorance of those branches of science may be excused in one who in other respects has done so well.

ART. 5. *Means of preserving Health, and preventing Diseases; founded principally on an Attention to Air and Climate, Drink, Food, Sleep, Exercise, Cloathing, Passions of the Mind, and Retentions and Excretions. With an Appendix, containing Observations on Bathing, Cleanliness, Ventilation, and Medical Electricity; and on the Abuse of Medicine. Enriched with apposite Extracts from the best Authors: Designed not merely for Physicians, but for the Information of others. To which is annexed, a Glossary of the technical Terms contained in the Work. By Shadrach Ricketson, Physician in New-York. 12mo. pp. 298. New-York. Collins & Perkins. 1806.*

THIS is a plain, modest, practical performance. The structure and style of it are, in every respect, better adapted to popular than professional readers. The author

makes no pretensions to novelty in his opinions, seldom offers objections to the correctness of prevailing doctrines, and urges no claim to the praise of labour, or research in pursuit of that kind of knowledge which distant countries, foreign languages, or scarce books render difficult or inaccessible to the ordinary reader. More intent on doing good than making a figure, he never suffers himself to be borne on the wings of speculation, nor indulges in the airy and adventurous flights of fancy, which lead so many writers astray from the course of sober and useful inquiry.

A large proportion of this work is compiled from such respectable writers as Dr. Ricketson considered best suited to his purpose. The mode of quotation is faulty, as he makes no reference to the volume or page of the work from which the extract is made. Such readers as may wish to pursue the subject of inquiry are, by this omission, prevented from tracing the subject with as much ease and convenience as might be desirable.

The utility of popular publications on physic has always been a subject of doubt. But, as the author's plan is chiefly confined to the preservation of health, and the prevention of sickness, and does not extend to the distinction and treatment of diseases, it is entirely exempt from all the objections which might be raised against publications of the latter kind.

However defective this work may be considered in point of originality, it must be allowed to contain a body of sound precepts for the preservation of health, and the avoidance of diseases. The importance of these precepts is not lessened, nor the duty of observing them impaired by their having been previously and repeatedly laid before the public. The most interesting rules and maxims of self-preservation are such as are most generally known to the community, and followed by all prudent persons. That writer, however, deserves well of the public who undertakes to explain and familiarize this kind of elementary instruction, and to extend it to all ranks of society. Dr. R. goes much beyond even this respectable grade of usefulness; as he treats of many subjects of great importance, which cannot be expected to be generally understood in the most cultivated community, and always handles them with clearness and discernment.

The plan of this publication may be understood from the following brief abstract of its contents. The author delivers his own opinions and those of the writers whom he quotes on the subject of *air and climate—food and drink—sleep, ex.*

ercise—clothing—passions of the mind—retentions and excretions. He offers directions for the management of valetudinarians, as well as for such as enjoy perfect health. In an appendix, he lays before the reader observations on *bathing, cleanliness, ventilation, and medical electricity.* To these articles of the appendix he subjoins remarks on the abuses of a number of the more active remedies, viz. *mercury, opium, strong emetics and cathartics, bitters, astringents, aromatics and stimulants; and, lastly, blood-letting.*

As Dr. R. has not undertaken to explain the noxiousness of *bitters and astringents*, when used unseasonably or excessively, we think proper to offer the following opinion of Mr. *Parkinson*, delivered in his late *Observations on the Nature and Cure of Gout*, in his attempt to explain the fatal effects of the Portland powder.

“When, from the powerful stomachic effects of the bitters, not only a greater portion of food is taken into the stomach, but a greater quantity of chyle and consequently of blood is produced, a plethoric state may be induced; the quantity of blood may exceed the powers of the already weakened vessels in which it is contained; whence may proceed those congestions on which the production of asthma, apoplexy, dropsy, &c. may depend. A circumstance of pretty general occurrence will strongly tend to produce this effect. The arthritic, suffering under considerable debility, to which diminished appetite and impaired digestion have much contributed, delighted with the restored powers of gratification, and eager to obtain a rapid renovation of his health, indulges his appetite without restraint, and thus totally destroys his health, which he was confidently hoping to establish.” See page 98.

We hope this publication will have the good effect of carrying the valuable cautions and precepts which it contains into many places, and recommending them to the attention of many families and persons whom otherwise they might never have reached. This benefit, together with that of recalling to the minds of many, who are too apt to forget, the salutary advice it offers, will, we are confident, afford to the benevolent and judicious author, a compensation for all the labour he has bestowed in preparing it for the use of the public.

MEDICAL & PHILOSOPHICAL NEWS.

DOMESTIC.

A new Case in Legislation.

WE have heard of the degree of Doctor of Physic having been conferred in certain European universities, by *royal* mandate. This course of proceeding, although at first view it may appear a little irregular, is, however, on reflection, found to be perfectly consistent with the principles of a monarchy, which make the Sovereign the fountain of all titles of honour. There is an instance in New-York where the Legislature interfered by an express statute to enable an individual, named William Firby, to practise Physic and Surgery. This law was passed in April, 1804. The preamble states, that a number of the inhabitants of Suffolk county had attested the performance of extraordinary cures by him, principally of the scorbutic kind; that he could not comply with the terms required by the existing statute to obtain a regular licence; and that they hoped he might nevertheless be authorised to practise; whereupon it was enacted, that the first Judge of the county, in case it should appear to his satisfaction, by three reputable physicians practising in the county, that the said person was qualified to practise physic and surgery, or either of them, to grant him a certificate thereof. And the filing of this certificate in the county clerk's office was declared to be a licence to practise in the State, any law to the contrary notwithstanding. This savours very much of obtaining the doctorate by *popular* mandate.

Composition of a celebrated empirical Remedy.

State of New-York, ss.

The People	{	Some time after the death of L—, the
<i>versus</i>		noted vender of nostrums in New-York,
B—.		a criminal prosecution was instituted on the

complaint of his widow, against B—, a man who had been employed by him, for having stolen, besides some books and phials, a quantity of the secret medicine, known by the

name of "Hamilton's Worm-destroying Lozenges," which formed a part of the estate of the deceased. The prisoner was arraigned on a bill found by the grand jury, for a crime which, if proved, would have been grand larceny; but was declared not guilty by the traverse jury. On the examination and trial of this man, it was discovered that the lozenges above mentioned *were a composition of calomel, jalap, yellow ochre, starch, and mucilage of gum arabic.* Some of the lozenges made by L—, and imitations of them by B—, were brought into court; they were of a pale yellow colour. This they derived from the ochre; while to the mercury and jalap they were indebted for their efficacy, to the starch for their bulk, and to the mucilage for their cohesion.

Insects abundant without Yellow Fever in 1806.

The spring and summer of 1806 were remarkably productive of insects. Swarms of common caterpillars devoured the orchards of apple-trees early in the season. The willows abounded with several species of larvas, which preyed excessively upon their leaves. The poplars were infested with the animals mentioned in our present volume, page 98, and with several other sorts. Mosquitoes were very plentiful, and in many places extremely troublesome. In short, almost all the plants which grow in our land teemed with their appropriate insects. Notwithstanding this, the crops were on the whole equal to any that were ever known, and better by far than they had been for a dozen years or more.

And yet, with all that luxuriance of vegetation and productiveness of animal life, the country and the sea-ports of the United States continued to be unusually free from yellow fever until the end of August, and thence to the season of frosts, in the beginning of November.

It may be inferred from these facts, that though there may be a coincidence between swarms of insects and years of pestilence, there is, at the same time, no necessary connection between them. This observation is the more important, as writers have been very fond of considering a plentiful generation of insects to be the forerunner or concomitant of epidemic diseases. Common as this opinion is, and strenuously as it has been urged, the careful observer of the seasons in America has now acquired satisfactory proofs that insects, even in great variety and number, are not the necessary harbingers or companions of popular dis-

temper: for, although it may happen that both may prevail at once, yet there is no dependance of either upon the same common or physical cause, nor of one upon the other. If insects, worms and reptiles of any kind, have a connection with the febrile distempers of human beings, it is most commonly by the septic effluvia they emit after death, when large masses of them, during the putrefactive process, overspread the earth, and contaminate the neighbouring atmosphere. And, in this case, the gases evolved do but resemble those from other inanimate animal substances.

Treatment of Persons who have been bitten by mad Dogs.

Dr. Joseph A. Gallup, of Woodstock, in Vermont, in July, 1806, made to Dr. Mitchill the following communication:—"I communicate to you the following, not as containing any thing new or interesting, except as it goes to show at what period attempts may be made to eradicate the canine virus after it is communicated to the system: perhaps many facts of this kind, brought together, might establish some points of much importance in the pathology of the disease.

"Gilbert Wait, about twenty-eight years of age, was bitten by a dog known to be mad, on the outer side of the left arm, about three inches from the joint of the wrist, on the 23d of March, 1805. On the 17th April, being twenty-five days, he called on me for advice, he having omitted it, until the principal part of the animal had died that had been bitten the same and preceding day by the same dog. There died within twenty-one days a dog, two hogs, and a sheep, with all the symptoms of canine madness. Two other dogs, upon being taken sick, were killed; and, in an adjacent town, several other animals bitten by the same dog next day died about this time. The wound made by the teeth was healed over with a smooth cicatrix, without inflammation: all the unusual feelings were a slight numbness and pain by turns in the affected part. I made a circular incision, so as to enclose both punctures of the teeth, and took out all the part bitten. At the bottom, about half an inch deep, was a black spot, being the very lowest part that the tooth pierced, which was about the bigness of a pepper-corn: I then applied some alkaline caustic, dressed the wound with empl. vesicat. and, by the help of poultices, directly brought on a plentiful discharge. This discharge was kept up until the next October, by occasionally applying the caustic. I could not tell

whether the poison had entered the lymphatics, and, if it had, many doubts lay on my mind whether it could be dislodged by any internal remedies. With a view of doing all I could, and, if erring, to err on the safe side, he was bled to the amount of about twenty ounces, took calomel twice a week as a cathartic, a solution of corrosive sublim. in brandy, so as to nauseate twice a day, as likewise from six to eight grains of gum. camph. twice a day. These measures were continued about two months. He had no hydrophobic symptoms, but seemed to manifest more inquietude and restlessness than is common for patients not labouring under actual pain. It being now fifteen months and upwards since the bite, I feel but little apprehension of his being afflicted with the malady."

Curious Observations on Light, during the late total Eclipse of the Sun. From a Letter of the Rev. Eliphalet Nott, D.D. President of Union College, to the Rev. Samuel Miller, D.D. dated Schenectady, October 6, 1806, and communicated by the learned Writer to Dr. Mitchill.

"At the instant the last direct ray was intercepted, and the obscuration became total, a tremulous undulating shadow, a kind of indescribable alternate prevalence and intermixture of light and shade, struck the earth, and played on its surface, which gave to the most stable objects the semblance of agitation.

"It appeared as though the moon rode unsteadily in her orbit, and the earth seemed to tremble on its axis. The deception was so complete, that I felt instinctively, and, in spite of the dictates of my reason to the contrary, a tottering motion. Some who were present I observed catching hold of whatever was near them for support, while others leaned forward, and insensibly flung themselves into an attitude which indicated that they found it difficult to stand.

"At the commencement of this singular phenomenon, and while the surface of the earth appeared to be violently agitated, the light and shade were irregularly intermixed, and each seemed struggling for victory. In about five seconds the darkness prevailed. The light and shade suddenly separated into alternate and distinct arches. Instantly the arches of shade began to force the arches of light from us towards the horizon. The motion at first was very rapid; the alternate arches were narrow, and followed each other in close succession; the motion gradually diminished; the streaks of

light became less and less distinct for about fifteen seconds, when melting into each other, the appearance ceased, and a settled gloom ensued.

"The scenes described at the commencement of the total obscuration re-appeared when the first direct rays of the sun were re-appearing. The same apparent agitation of the surface of the earth; the same apparent struggle between the light and darkness; the same separation between light and shade into distinct and alternate arches, and the same motion reversed; for now the arches of light seemed to crowd those of shade inward, and the whole movement was from the horizon towards the centre, which continued about the same time, and disappeared in the same manner as above described.

"A lake at first violently agitated by something flung into its centre, and sending its undulating waves to its circumference, furnishes a pretty correct idea of the appearance the surface of the earth assumed when the total eclipse commenced; and, if after the first agitation of the lake had subsided, its undulating waves were to roll from the circumference to the centre, and especially could they alternately be tinged with light and shade, it would furnish not an incorrect idea of the appearance of the earth when the total obscuration ended.

"How is this phenomenon to be accounted for? When the direct rays ceased, why should the shadow on the earth appear agitated. Has this circumstance been noticed elsewhere, or in records of other total eclipses? If that part of the moon's orb which intercepted the last direct rays of the sun were an ocean, and tempest with a storm at the time, would not the effect have been similar to that described?"

Facts concerning the Generation of Eels.

Certain doubtful points in the history of the female American bear, in relation to the gestation and nurture of her young, were cleared up in *Med. Rep. Hex. ii. vol. i. p. 418—421*; and in *Hex. ii. vol. ii. p. 76—81*, some curious particulars concerning a species of American shark were told, showing a remarkable anomaly in generation. There are some facts concerning the reproduction of eels, about which physiologists seem not to be agreed. The old opinion is, that these fishes have no sex; consequently there has been always deemed to be something mysterious in the manner of continuing their race. Within the last century, however,

many observations have been made on the manner in which they propagate their kind; but there are still uncertainties and differences of opinion on some parts of the subject.

Mr. Benjamin Allen (in a memoir of which there is an account in 3 Lowthorp's Abridgement of the London Philosophical Transactions, p. 837) seems to think eels, though they have eggs, are viviparous. Walter Chartwynd is quoted as the person who found living young eels in the bellies of the old eels. The compilers of the Encyclopædia Britannica quote from other writers, but leave the question unsettled. Diderot, D'Alembert, and the other French Encyclopædists, (title *Anguille*) consider eels as engendered, not from corruption, but in the common way between male and female. The puzzles and mistakes they say have arisen from the smallness of the outlets to the womb in the females, and for the sperm in the males, which are not very apparent, but lie covered with fat, as do also the eggs themselves. On these accounts they are not very readily seen. Valisneri is referred to as declaring that eels are really viviparous. Redi, Severini, and Paulli were of the same opinion. Pennant, in his *British Zoology*, considers them as multiplying in the usual manner, excepting that they differ from most other fishes by bringing forth their young alive.

To these testimonials we add another derived from actual observation. This is in favour of the common opinion, that eels continue their race by means of eggs, like most other creatures of the class to which they belong. The relater of the account is Dr. Mitchill, who has stated the facts and circumstances which fell under his notice in the following words: "On the 5th of September, 1806, being on a shooting and fishing party, with some friends at Flatlands, on Long-Island, one of the inhabitants brought from the adjoining bay, a basket of uncommonly large salt-water eels. He soon began to skin and gut them in our presence. The eels abounded with fat. One of the gentlemen observed, that he had never seen so much of it in any kind of fish. The fisherman replied, that not one half of the whitish substance which lay beside the intestines and back bone, and which was referred to, was fat. He once himself had believed the whole of it to be fat, but had been convinced as much as fifteen years ago, that the greater part of it was something of a very different nature. His wife joined him in this declaration, and they both said they had become con-

vinced of their error, by having repeatedly put a considerable quantity of the supposed adipose matter into a frying pan, and seeing it crisp up, and turn brown and black without running to oil. On hearing this conversation, I examined about a dozen of the eels as they were displayed before me. I found there were two white organs, which, to an incautious eye would pass for fat. These, on a nearer inspection, were the *roes* or *ovaria*, extending in two long leaves or legs, from the anus on each side of the spine far towards the neck. They were plentifully supplied with blood vessels, and contained numberless ova of a very minute size. Their organization was totally distinct from the cellular adipose substance. On comparing the two, their different structure and appearance would immediately strike the eye. I examined as many of them as I pleased, and put a specimen in preservation for bringing to the city on my return, where it is now in spirits. Though the people hereabout live very much upon eels, both summer and winter, they appeared to have no knowledge of living young ones found within the bodies of the old ones. Eels seem to breed during their retirement to the mud in winter, and, for that reason, have been less exposed to remark. In America, therefore, I think they are to be ranked among the *oviparous* fishes."

Confirmation in recent Experiments, by the French Chemists, of the Proneness of Animal Matter to Acidity.

As long ago as 1795, the Professor of Chemistry, Natural History and Agriculture, in the College of New-York, published his conviction, that a mischievous acid, formed plentifully during certain states and stages of the putrefactive process, and thence called by him the *Septic* acid, was a frequent cause of disease. From a broad survey of the facts, he concluded that if the septic acid was formed during the corruption of animal or other organic matter, it might exhale, vitiate the adjoining and surrounding atmosphere, and excite fevers of various types. If formed in the stomach and intestines, from unconcocted food rotting there, nausea, head-ach, flatulency, dysentery, &c. would probably ensue. When this septic acid was engendered in the linen and other clothing and bedding, it might bring on synochal or typhous fevers, with yellowness, and other distempers of the skin, according to the constitution of the patient. From many experiments, he was led to believe this acid was sometimes formed in the pus of ulcers, especially when bad-conditioned, phagedænic,

and cancerous. When formed on the surface of dead flesh, it sometimes poisoned cooks and dissectors. He was at that time led to conclude, that the septic acid underwent a variety of modifications, and, among others, under certain circumstances, assumed the mitigated form of the nitric. He concluded too, that the atmosphere owed its salubrious quality to the existence of its septic and oxygenous airs in an uncombined and separate state; but that it would become unhealthy whenever any considerable quantity of those two of its ingredients were chemically associated or mixed. Such a junction of ingredients, he supposed, would form an infected or pestilential atmosphere. To counteract this septic acid, the Professor observed the operation of alkalies, and concluded that those antiseptic and antipestilential agents were wisely interposed by nature, to check the predominating acidity which would otherwise overwhelm the world. And on this was founded his doctrine of alkaline neutralizers and preventives of septic destruction. From the yellowness caused by nitrous acid upon the skin, and from the resolution of the animal muscular substance, by nitric acid, into oil, yellow liquor and ragged fibres, in his experiments, he was induced to believe there was some radical resemblance between the septic and nitric acids.

Latterly, several of the French chemists have gone further, and related experiments which throw additional light on Dr. Mitchill's pathology. They are told on the authority of Messrs. Laguer, Vauquelin, and Fourcroy, and printed in the fifty-sixth volume of the *Annals of Chemistry*. They have found that animal muscle, treated with nitric acid, is resolved into a yellowish liquor, a greasy yellow substance floating in that liquor, and a portion of fibrous matter not yet wholly decomposed resting near the bottom. On examining this yellow matter, they found it to abound in acidity, and that this sourness was independent of the nitric acid. Alkalies neutralized it, and let go their carbonic acid to unite with it. This yellow matter was very bitter. On account of its colour, they called it "yellow acid." It is no doubt one of the forms of the *septic*, as are the nitric and probably most of the other animal acids. They discovered various other things, though it is probable many of them were formed in the course of the experiments, and argue nothing as to the composition of the substance on which the experiments were made.

The discovery of such an acid, however, carries light into

some of the recesses of the animal constitution. The yellowness occurring in yellow fevers and in jaundice seems now to admit of an obvious explanation. This acid may be the cause, as alkalies are among the most efficacious and approved remedies. The gall itself probably owes its yellowness and bitterness to the same cause; and it contains an alkaline basis for the purpose of overcoming and checking the perpetual acescence to which the living body and its fluids are prone. The urine may occasionally derive its yellowness from the presence of the same agent. It would even seem that this yellow form of the septic acid might be evolved by certain internal causes, which are capable of combining its elements together, and of associating the septon with the oxygen and other ingredients, to constitute it within the body during life.

An Experiment showing that Yellow Fever is not contagious in Spain, any more than in the West-Indies and on the Continent of North-America.

In the course of our work, the project of destroying contagion by acid fumigations has been commented on in Hex. i. vol. ii. p. 232, vol. iii. p. 200, vol. iv. p. 235, vol. v. p. 455, vol. vi. p. 84, Hex. ii. vol. ii. p. 102, and vol. iii. p. 443. It was hoped there would have been no further occasion of mentioning them; but a royal proclamation by Carlos, King of Spain, on the subject, in August, 1805, is too remarkable to be omitted; and we translate and publish it for the purpose of showing that instead of the contagion which his Majesty supposes to have been destroyed by the vapours of oxygenated muriatic acid, there was in fact no contagion at all in the case. Considered in this point of view, the experiment, if it shows any thing, proves that contagion is neither the cause nor the offspring of yellow fever. For as to the disinfection of a pestilential hospital by that gas, there are more conclusive facts wanted than ever have been hitherto produced. The proclamation alluded to is in the following words, addressed to the Secretary at War:—

“The King has been informed by different reports from Don Francis Borja, General Commandant of Carthagena, of the important and distinguished services rendered by Don Michael Cabanellas, during the contagion which has prevailed in that place. His Majesty has been particularly impressed with the value of an experiment made by him in

the Antigones hospital of that city, in which he shut himself up with fifty persons to prove the efficacy of the Guytonian fumigations. He slept there with all these persons, including two young children of his own, in the same beds where several victims of the contagion had died, and left horrible marks of their blood and vomiting, without any other preservative means than the mineral acid vapours. His Majesty has learned, with the greatest satisfaction, that the result had been so fortunate, that the fifty-one persons, after having been shut up in this lazaretto, had come out in the most perfect health. Whereupon, to give a testimonial of his royal munificence, the King remits, in favour of the galley-convicts who voluntarily underwent this experiment without having had the yellow fever before, one year of the term for which they had been respectively sentenced to chains; approving at the same time the gratification which had been permitted them by his Captain-General. As to Don Michael Cabanellas, the King confers on him the title and honours of a physician of his household, with an annuity of 24,000 reals (6000 French livres, or 1200 dollars), to be paid unto him monthly out of the funds of the commonalty of Carthage, with the privilege of voting in the municipal body of the town in the same manner as if he had inherited a birthright. His Majesty's generosity will in like manner be extended to his two children, who, together with their father, hazarded their lives for the interest of the state and of humanity."

This was a fortunate night's lodging for Don Cabanellas and his companions. Unfortunately, however, it proves nothing in favour of the anti-contagious quality of the muriatic gas. And as to the danger of the experiment, there was more to be apprehended from the muriatic acid vapours than from any contagion the hospital contained.

Ratio between Population and Food in the Human Species.

One of the most profound works on medical and political economy, is the *Essay on the principle of Population; or a View of its past and present Effects on human Happiness; with an Inquiry into our Prospects respecting the future Removal or Mitigation of the Evils which it occasions*, by T. R. Malthus, A. M. Fellow of Jesus College, in Cambridge, England. The edition of 1803 is a large quarto, of four books, and of more than 600 pages.

The fundamental position in this laborious and learned

investigation is, that the procreative power far surpasses the means of procuring subsistence. The propagation of the species, if unchecked, would progress in a geometrical ratio, while the supplies of food cannot be made to advance faster than an arithmetical proportion. Their numbers have a tendency to double themselves once in 25 years, thus: 1, 2, 4, 8, 16, 32, 64, 128, 256; but subsistence can be provided only as 1, 2, 3, 4, 5, 6, 7, 8, 9; so that in two centuries the population would be to the means of support as 256 to 9, and in three centuries, as 4096 to 13; and so forth.

It hence follows, that the multiplicative power is always striving to extend beyond its proper limits; while the want of aliment imperiously represses and restrains it. And in the conflict which takes place between the increased numbers of human beings, and the difficulty or impossibility of procuring for themselves the necessaries of life, there is a check or limitation to further argumentation. In thus adjusting this extreme limit of population, a vast amount of crimes and wretchedness is experienced; for, in order to reach the maximum of numbers, it is necessary for each individual to descend to the minimum of subsistence.

Mr. M. proves by inductions of facts from the history of savage people in America, the South Sea islands, and Africa, from the Scandinavian nations of Europe, and the pastoral tribes of Asia, from the history of Siberia, Turkey, Hindostan, Thibet, China, Japan, Greece, and Italy; and from the condition of modern Norway, Sweden, Russia, Switzerland, France, England, Scotland, Ireland, and other countries; 1. That population is necessarily limited by the means of subsistence: 2. That it invariably increases when the means of subsistence increases, unless prevented by some very powerful and obvious checks; and, 3. That these checks, and the checks which repress the superior power of population, and keep its effects on a level with the means of subsistence, are resolvable into moral restraint, vice, and misery.

The procreative power is so much greater than the capacity of the earth and sea to afford food, that unless it is arrested by celibacy, or some other preventive check, premature death must in some shape or other visit the human race. The vices of mankind are active and able ministers of depopulation. They are the precursors in the great army of destruction, and often finish the dreadful work themselves, as in the cases of war, ardent spirits, and venereal poison.

But should they fail in this work of extermination, sickly seasons, epidemics, pestilence and plague, advance, in terrific array, and sweep off their thousands and tens of thousands. Should success be still incomplete, gigantic inevitable famine stalks in the rear, and, with one mighty blow, levels the population with the food of the world.

In considering the different systems which have been proposed to lessen the enormous evils resulting from the too great multiplication of human beings, Mr. M. reviews the equalizing projects of Condorcet, Paine and Godwin, and proves their total unfitness for the purposes of society and the nature of man. He demonstrates the fundamental error of the poor-laws of England, in their tendency to increase population without increasing the means for its support; encouraging marriages, and then encouraging the new family to rely, in pressing exigencies, upon the parish for support, and not upon their own exertions. He compares the agricultural and commercial systems of political economy, and inclines decidedly to the former.

He proves that the surplusage of inhabitants, or that part which is redundant, superfluous and hanging upon society as a cumbrous and oppressive burthen, will prematurely perish, by war, famine, pestilence, small-pox, or other destructive causes, which serve as the waste-gates of population; or will be cut off by crimes, vices and intemperance, which reduce its luxuriant overgrowth, and trim it down to a more moderate size and compass. Whenever, therefore, the numbers exceed the quantity of food necessary to support them, the supernumeraries must perish by an inevitable law of nature. And he questions whether the extirpation of small-pox by cow-pox, should that ever take place, would do any good; for if marriages between the indigent members of the community should be consummated at the usual rate, the same number must die, and instead of being destroyed by that disease, they would merely be carried off by some other exterminating agents. On this ground he doubts whether the average population of the earth has been diminished an unit by all the ravages of small-pox and plague.

His grand remedy for the exuberant ills resulting from the excess of the propagating above the feeding powers of man, is that kind of moral restraint which produces virtuous celibacy, discourages early marriages, and withholds every person from entering into the connubial state, until there

shall be the actual means or a reasonable prospect of supporting the probable offspring. The work, which is a sequel to those of the political economists, Stewart, Smith, and Hume, is full of new and old views, and is worthy of most attentive perusal, by all who take an interest in the production, enjoyments, sufferings and disappearance of the human race. It exposes the error of foundling hospitals, poor-rates, and a considerable number of what are called charitable and benevolent establishments, in very strong terms.

Elgin Botanical Catalogue.

The proprietor of the Botanical Garden near the city of New-York, of which we gave an account in our Hex. II. vol. iii. p. 438, with expressions of approbation and good wishes, has since that time published from the press of Messrs. Swords, in a duodecimo pamphlet of 29 pages, "A Catalogue of Plants contained in the Botanical Garden at Elgin, near the city of New-York, established in 1801." It appears from this, that within the five years since this collection was begun, about seventeen hundred species of vegetables, indigenous and exotic, have been placed within the walls of the garden. The scientific names only are printed; as the present edition is chiefly intended to give information to Botanists abroad, that they may know what to send to the proprietor, and also what to expect in return. When the number of species shall become more numerous, and more worthy of the general notice of his fellow citizens, it is his intention to give another edition, with the proper English and vulgar names; to distinguish such as are useful in the arts, in medicine, and in agriculture; and such as are poisonous to man and other animals, and noxious to the former. We learn with pleasure that he meditates also observations on the qualities of certain species; with engravings and descriptions of such new ones as may from time to time be discovered; after the manner of the *Hortus Kewensis*. In the short preface to the list, the reader will find the author's recital of his views and progress; of the great objects in natural history and education he has in contemplation; and of the principal benefactors to his conservatory, hot-house, and garden.

Premiums by the Agricultural Society of the Island of Jamaica.

The Jamaica Agricultural Society, by their secretary, W. J. Stevenson, Esq. in his publication of July 22, 1806, has of-

ferred rewards and honours for the encouragement of improvements on plantations. Among others are the following: Gold medals for certain improvements in cultivating sugar-cane; the like to the overseer of any estate whereon the greatest comparative natural increase shall take place among one hundred negroes or more between December, 1806, and 1807; the like for the person who shall most properly plant out not less than one thousand trees of cedar, moho, bullet, mahogany, green-heart, fustic, dog-wood, bread-nut, yellow-saunders, black-heart, fiddle-wood, rose-wood, and other timber trees; and the like for the best practical treatise on the raising and preparation of coffee. Silver medals are offered for the best practical treatise on hanging coppers; for the most approved treatise on boiling and making sugar; for the most economical mode of fitting a still; for the person who shall produce the fattest and largest steer for beef; for the greatest plantation of bread-fruit trees, not fewer than one hundred; for the largest number of cocoa-nut trees, not less than five hundred, reared on any one plantation; and for the most successful substitution of oxen instead of mules for plantation labour.

Premiums offered by the Philadelphia Society for Improvements in Agriculture.

The Agricultural Society of Philadelphia, of which Judge Peters is President, and Doctor Mease Secretary, has proposed premiums on various subjects connected with this institution, for 1806. These are ten in number, to wit; 1. For ascertaining by analysis the constituent parts of arable soil, and the application of the knowledge so desired synthetically to improve land; a piece of plate of the value of one hundred dollars. 2. For the greatest quantity and best trench-ploughed worn-out land, not less than five acres, nor less than ten inches deep; the best experiment a gold medal, the second best a silver one. 3. For a course of crops on trench-ploughed land; the gold and silver medals. 4. For the best crops of leguminous plants, sowed broad-cast, as coverings on fallows preparatory to winter grain; a silver medal, or fifty dollars. 5. For the most successful experiments for destroying the perennial weeds which infest farms; a gold medal. 6. For the preferable exhibition of the profits of a dairy for butter and cheese, from twenty cows; a silver medal, or forty dollars. 7. For the most promising experiment on any species of shrub or tree, proper for live fences;

a gold or silver medal, according to the extent and importance of the experiment. 8. For the best essay, founded on facts, of the preferable mode of clearing forests, and turning them to farms; a gold medal. 9. For the most approved plan for investigating epizootic diseases, and improving veterinary knowledge; a gold medal. 10. For the most approved samples of household manufactures in linen, cotton and woollen goods; a silver medal. Though the premiums are published for the present year, it is understood that they will be continued until the subject of them shall be fully ascertained. These premiums are well calculated to foster the spirit of internal improvement and manufacture. And although long experience seems to have convinced many of the philanthropists and economists, that the thirst and gain consequent upon the well-directed diligence of individuals is its surest and best reward; yet we should be pleased, from the specimen we have seen of the proceedings of the Philadelphia Agricultural Society, that their ability and execution were equal to their zeal. Our readers are referred to the Society's publications for a further detail of particulars.

Remarkable Appearance in the Atmosphere at New-York, on Sunday, 28th September, 1806: Observed by Dr. M. Foot, and communicated to Dr. Mitchill.

Probably your attention was arrested yesterday, September 28th, by an appearance in the atmosphere, I believe, not very common; if not, the curious will be gratified by learning your opinion on the subject.

While looking out at my back-room window, I first observed a white flaky substance descending in the atmosphere, and which, with the help of imagination, I was almost willing to believe was a kite at a great distance. This impression was soon done away on going to the door, when I perceived substances of this kind falling in whatever direction I looked. While floating in the air, it resembled pieces of cotton of a loose and fragile texture, and on examination I could form no better opinion.

Be this what it will, I distinctly recollect to have seen the phenomenon before, and more than once; but never on so large a scale and so worthy of notice. I am told that the appearance I have described, and which you probably noticed, continued all the latter part of the day.

A violent gale from the north-east followed this phenome-

non; beginning on Monday afternoon at four o'clock, and continuing with rain during the night.

Evans's Improvements in the Machinery of Mills.

On mentioning the subject of public improvements, we take the opportunity of calling to mind one of the greatest with which our land has been favoured. Indeed, in this country, where such vast quantities of wheat are manufactured into flour, we would not deny that it was the most beneficial of the whole mass of domestic inventions. We mean the improvements in the machinery of mills, and the method of grinding, by our countryman OLIVER EVANS. This man has unquestionably the merit of strong inventive powers applied to improve some of the most useful mechanic arts. And in actual improvement he has done more than almost any other person among us. His book published at Philadelphia in 1795, under the title of *The Young Mill-Wright and Miller's Guide*, in one large volume octavo, illustrated by twenty-five copper-plates, will long remain an evidence of his profound knowledge of machinery, and of the utility of his inventions. In the same cover is bound up THOMAS ELLICOT's *Practical Mill-Wright*. And the publications of these two artists form a body of unusually valuable information; such as every constructor and every proprietor of mills ought to have at hand, and be enabled to consult. His manual of instruction, we are sorry to observe, never circulated to an extent equalled by its merits. We have not often seen it to the eastward of the Hudson. And if the copies are become scarce, we have no doubt of the advantages that might accrue to men of business from a new and enlarged edition.

Incorporation of Medical Societies in the State of New-York.

An act was passed by the Legislature of New-York on the 4th April, 1806, "To incorporate Medical Societies, for the purpose of regulating the Practice of Physic and Surgery" within the commonwealth. By this law, physicians and surgeons, in any number not less than five, are authorized to incorporate themselves by counties, to examine students, and to grant licences to practise. Each county society may hold estate to the amount of 1000 dollars. The State consists of about thirty-five counties; and consequently of as many Medical Societies, provided the professional gentlemen in each county have incorporated according to law. It is provided in the statute that a central society shall be formed

by a meeting of delegates elected one by each county society, and shall hold meetings at Albany. Fifteen of these federative delegates are to form a quorum for business. The central society may hold estate to the amount of 5000 dollars. In many of the counties, these Medical Corporations are already formed, and their representatives to the General Assembly have been chosen. It is hoped the interests and respectability of the profession will be greatly promoted by this new organization.

Mott's Dissertation on the Marsh Rosemary.

One of the earliest inaugural essays published by a candidate for the doctorate in the College at New-York, was on the medical properties of *Cowitch*, (*Dolichos Pruriens*) by Samuel Kissam, of Hempstead. We are now furnished with another experimental inquiry into the history of an American plant from a graduate in the same Seminary. The Marsh Rosemary (or *Statice Limonium*) has been selected by Dr. Valentine Mott as the subject of his inaugural treatise. In this performance the author has given a neat and correct figure of the vegetable, and accompanied it with a botanical character and description. Next he has related thirty-five experiments made in various ways, for the purpose of discovering its qualities; and given repeated specimens of ingenious chemical reasoning upon them. Lastly, he has treated of its medical virtues.

It appears from Dr. M.'s experiments, that the chief power of the *Statice* is not in the leaves, but the root. This latter possesses a large portion of astringent matter, with a small quantity of sea-salt, and uncombined soda. The astringency is so considerable as to supersede, in his opinion, the necessity of importing galls for the preparation of ink. And he recommends the exhibition of it, especially in the form of cold infusion of the dried root, for intestinal debility after dysentery, in diarrhœa as well of infants as adults, in cholera, hæmoptysis, and hæmorrhoids.

When those who solicit medical honours select subjects of botany, mineralogy, or any other species of physical investigation, for the display of their abilities, they do greatly more credit to themselves, and confer greater benefits on society, than by writing a common-place history of a disease, or some more speculative thesis. And it may be reasonably expected that students of physic, whether they labour for their own fame or for public utility, will imitate the example

of Dr. M. in collecting facts, or making experiments on some object of natural history, which may be useful to man, in medicine and the arts.

Sketch of the Weather and Diseases in the Summer and Autumn of 1806.

Since the commencement of this work it has been too often our painful task to record the ravages of pestilential epidemics. Happily for the United States, the late season has afforded an exemption from this calamity. All our Atlantic sea-ports, and even the city of New-Orleans, have enjoyed a degree of health seldom observed throughout such an extensive line of country in the season of autumn.

If proofs of the connection between weather and the production of yellow fever had ever been wanting, the late season would have presented enough to satisfy the most careless observer. The heat of summer and autumn was so moderate as to render them singularly pleasant as well as healthful. The south-west wind, which is generally hot and frequently humid, seldom prevailed. After rain, the wind in most cases was northerly, cool and invigorating. In a word, weather better adapted to repress the exhalation of miasmata, and to guard the body against the impression of exciting causes, can scarcely ever be expected to occur in these latitudes.

Though nothing approaching to an epidemic took place, several cases of yellow fever, highly and exactly characterized, were observed in the course of the season from June till November, in this city; and served to show what might have been reasonably apprehended from a more unfavourable course of the weather. In different parts of the country too, from unequal quantities of rain, or from peculiar circumstances of moisture or dryness in certain districts of low ground, intermittent and remittent fevers of a malignant character, and dysenteries were found to prevail. In some places these diseases were epidemic to a considerable degree.

The miasmata which were let loose and floating in our atmosphere, during this season, though not sufficiently active and virulent to produce many instances of that deadly and rapid form of malignant disease which is popularly called *yellow fever*, gave rise to numerous cases of illness which erroneously passed under the name of *typhus*. It is scarcely necessary to observe that this disease was totally different, both in its origin and symptoms, from that which is generated

among the poor, exhausted, and miserable classes of the people, dwelling in low, crowded, ill ventilated and filthy habitations, which generally occurs in winter, and which is properly denominated *typhus*. In every leading particular the disease in question differed from *typhus*. It attacked persons living in the most commodious and comfortable circumstances; it prevailed at a season when houses were freely ventilated; it seldom seized more than an individual in a family; and it never excited apprehensions of contagion. In many districts of the country it prevailed as much, or more than in this city. The relation it bore to the yellow fever was manifested by its tendency to affect the stomach in a similar manner, and by the appearance of yellow skin and dark coloured vomitings which were occasionally observed. A disease of exactly the same character has been frequently noticed in former seasons, when yellow fever had prevailed, at the decline of the epidemic, and when the approach of frost had weakened the force of miasmata to such a degree that they were no longer capable of producing the more virulent forms of the distemper. Thus we see, that while the higher grades of noxiousness in the miasmata of summer and autumn, generated by the heat and humidity of a season approaching to the tropical degrees of intenseness, will produce an *acute and rapid yellow fever*, proving fatal in a few days, attacking a large proportion of the community, and often displaying all the characters of pestilential malignity;—the lower grades of noxiousness in such miasmata, exhaled in a milder season, or robbed of former activity by cold weather, will produce what may not unaptly be called a *mild and chronic yellow fever*, protracted to two or three weeks, seizing only a small proportion of the community, and only occasionally exhibiting the worst features of malignity. In these instances, the effect is so exactly proportioned to the cause, the irregularity springs so directly from the fluctuations of the source, that all the varieties which have been noticed serve only to establish the identity of their origin, and to prove the wide prevalence of the principle which produces such diversified aspects of disease.

Yellow Fever at Richmond, Virginia.

An occurrence has taken place in this city of considerable use to the medical world. Its importance may be estimated by the single fact, that it satisfactorily decides the

long agitated dispute of the yellow fever. All doubt, all disputation, all cavilling must yield before it.

The question is, whether the yellow fever of our cities is of *foreign or domestic* origin? whether it is imported from the West-Indies, or generated by the noxious air of our towns? The last has been the general opinion. It was evident that if the fever could be imported, it might be conveyed from one person to another, or from place to place. But experience has proved that it was "incommunicable *in the country* either by persons under the disease, or by goods carried from diseased places." Was it then reasonable to suppose, that a fever which could not be communicated from the town to the country, could be carried from one country to another; from the ports of the West-Indies to those of the United States?

It must be admitted, however, that this fact is not of such a *direct* and overwhelming kind as to put down all opposition. Ingenuity has eluded, but not destroyed its force. It is contended that the noxious miasma only acts in large cities, where the *atmosphere* is so impure as to be *thrown* into a state of noxious fermentation, or where *human bodies* are so enfeebled by the impurity of the air, as to be *predisposed* for its action. When transported into the country, the atmosphere is too pure to admit of its operation. It has no nidus to receive it. It is without the train of favourable circumstances, which must concur and assist its virulence. The air is too pure to be thrown into fermentation, and man too healthy to be predisposed for its action.—"It is for this reason," say the advocates of imported fever, "that it is not always communicated from the town to the country. We admit that the fever is not *alone* sufficient to produce its full effect in towns; but we contend, that when it *does* appear in our cities, it must owe its *first germ* to foreign importation."

But the following incident is of a kind to remove *all* opposition.

The *city* of Richmond at this time enjoys an almost unexampled share of health. Bilious complaints have by no means an uncommon fatality. Rockett's landing, our only depot of *foreign trade*, is not peculiarly afflicted by any species of sickness, much less by any of an uncommon appearance. Will the advocates of imported fever then believe, that at this very moment it has appeared in the Peni-

tentiary; at some distance from the centre of the city, on the very skirts of the country, insulated from every other building, and on the *opposite* side of the town to Rockett's landing? *Such*, however, is the melancholy fact.

That the fever of the Penitentiary is the yellow fever of our cities is decided by the two *experienced* and ingenious physicians who have attended it. Its symptoms are the same in kind, though infinitely less in degree: the pain in the head—the red eye—the skin of a much darker hue than gold—the black vomit, or black fæces, according to the course of the bile. In the only case where the patient has fallen a victim, the sensibility of the stomach was so excessive, that by gently touching with the finger the region of the stomach, it produced the hiccup so symptomatic of the complaint.

Where is there a fact more conclusive as to the origin of the yellow fever, because so little confused by the operation of contrary causes? It would almost be a miracle, had the *imported germ* of the yellow fever visited the Penitentiary. Here are a set of men almost completely cooped up from the rest of the world. The turnkeys, the respectable superintendent of the Penitentiary, his whole family, are healthy. The guard, who traverse the outside of the building, are too far removed to communicate the contagion. Few persons have access into the building; no one can enter it without a permit from two inspectors; no one who has visited it lately has exhibited symptoms of the fever. The building is too completely cut off from the city to receive the noxious contagion in a tainted stream of air. And whence was this stream to blow? There is not a single corner in the city where the fever has peeped forth: *not one person who has fallen beneath it.*

There seems not a deficient link in this chain of proof. Every thing is complete—every thing conclusive. It is scarce possible that the fever could approach from without; it must therefore have been generated from within. But *here* are sufficient causes for its production; desponding mind; the want of exercise; the want of something to exhilarate the spirits, and put the torpid functions into motion; the damp weather succeeding to a season of unexampled drought; the long train of inconveniences, inseparable from a state of confinement and labour. When causes like these exist, why seek for its origin in the West-India market, whence no infected vessel has arrived; or in a city not yet visited by a single symptom?

But let not our distant friends indulge the slightest alarm about the consequences of this fever. We pledge ourselves as to the spirit of the following facts:

That not more than six or seven of the convicts have symptoms of the fever;

That one only has died, whilst others are convalescent;

That the fever of the Penitentiary, though similar in its general symptoms, is comparatively innocuous to that of our large towns. The only victim who has yet fallen beneath it, lingered as many as twelve or thirteen days; whereas in Philadelphia it was not uncommon for them to sink in twenty-four hours. Of such *unequal* violence is the *same* fever at *different* places!

That there prevails not the slightest alarm among the inhabitants of this city;

That a few have even visited the Penitentiary, for the purpose of inspecting the disorder; so perfectly were they convinced of its harmlessness;

And, that the best established opinion is, that the fever is not in the least infectious; that it rather passes from the air to the patient than from the patient to the air; that even in that case, it does not immediately operate, but that it requires time to break down the tone of the body, ere it can produce its effect.

[*Richmond Enquirer.*]

Assalini on the Plague, and Pinckard on the Yellow Fever.

We think it our duty to recommend to the attention of the physicians of the United States, an American edition, from the press of Messrs. T. & J. Swords, of ASSALINI'S *Work on the PLAGUE*, and PINCKARD'S *Letter on the Yellow Fever*, comprised in one volume 12mo. Assalini's Observations on the Plague appear to us to be the best that ever have been offered to the world. He decidedly and boldly emancipates himself from the prejudices too long entertained concerning its contagiousness and transportation from one country to another. His work has produced a strong sensation among medical men in Europe, and ought to be universally studied by the profession in this country. Of Dr. Pinckard's *Letter on Yellow Fever*, extracted from his "*Notes on the West-Indies*," it would be difficult to speak in terms of too high commendation. His arguments in proof of the domestic origin and non-contagiousness of that disease are altogether unanswerable. The collection is also enriched by a refutation of *Bertrand's* account of the introduction of the

plague into Marseilles in 1720. In short, this small volume comprises matter on the subject of pestilential diseases of such great and distinguished value, that we trust it will speedily be found in the hands of every physician in the United States.

Dr. Ewell's Chemical Publication.

We intended to submit to our readers in the present number, a review of Dr. Ewell's "*Discourses on the properties of Matter.*" The pressure of other things, which had been long on hand, constrains us, unwillingly, to defer the examination of this respectable work to the next number.

FOREIGN.

Willan's Treatise on the Cow-pox.

DR. Willan has in the press a work on the Cow-pox, and on its varieties and anomalies, to be illustrated by engravings, in the manner of his work on Cutaneous Diseases. It comprises the following selections:

1. On the combined Inoculation of the Variolous and Vaccine Fluids.
2. On the Characteristics and Effects of perfect Vaccination.
3. On imperfect Vaccination.
4. Small-pox subsequent to Vaccination.
5. On the Cutaneous and Glandular Diseases *imputed* to Vaccine Inoculation.
6. On the Chicken-pox and Swine-pox.
7. On the Inoculation of the Chicken-pox.
8. Extermination of the Small-pox.

The appendix consists of letters from Dr. Jenner, and other physicians and surgeons in the principal towns of Great-Britain and Ireland.

Beddoes' Work on Consumption, Scrophula, &c.

Dr. Beddoes has in the press a report from an Institution at Bristol for investigating the origin, and cutting short the progress of Consumption, Scrophula, and other prevalent disorders in families and individuals. These cases have been kept for several years by various medical gentlemen, who will be named, as well as by the editor, who will accompany them occasionally by practical observations.

Royston's Work on the Medical Literature of England.

Mr. Royston is engaged in an extensive work on the Medical Literature of England; with the first part of which he expects to go to the press in a few weeks. The object of this work is to give a description and analysis of books published by Englishmen, on the science of medicine; beginning with the earliest printed works, and ending with the year 1800. It is intended to be given in the manner of a Bibliotheca, describing the form and peculiarities of every work, under the size, *principes* and *optima* editions, &c. &c. To which an analysis of the contents of each volume will be added; constituting a concordance of facts and opinions, arranged in a manner that will afford a ready reference for the student, the practitioner, and the man of science.

Remarkable Instance of Corpulence.

Relative to the human phenomenon, Mr. Daniel Lambert, of Leicester, now exhibiting himself in Piccadilly, we have been favoured with the following correct particulars.—This extraordinary man is about 36 years of age; five feet eleven inches high; and his weight is upwards of fifty stone, fourteen pounds to the stone. He enjoys perfect health and vigour; his breathing is free and easy; his sleep undisturbed, to which he has no extraordinary propensity; and he eats common food, and drinks water only. His extraordinary bulk arises from an immense accumulation of fat within the abdomen, and in the adipose membrane under the skin. The tumefaction of the thighs, legs, and feet, is enormous; the arms and hands do not much exceed the usual proportion in fat persons. All the functions of the body are in good order. He never felt pain or uneasiness from the stretching of the skin. In the progress of its distension, however, he has four or five times had an erysipelatous inflammation of the legs, which, in a week or two, was removed by proper treatment, but has been succeeded by a scaliness and thickening of the skin. His bulk has increased gradually from twenty years of age. His father and uncle were both large men; but the weight of either did not exceed thirty stone. [Lond. Mon. Mag.]

On the Treatment of the Hooping-Cough.

We are informed that a paper has been presented to the Medical and Chirurgical Society of London, by Dr. Richard Pearson, on the treatment of the Hooping-cough. After

bearing testimony to the advantages to be derived from a restricted use of emetics, he states that he has failed of success when he has attempted to cure this disorder by vomiting-medicines alone, agreeably to the directions of Dr. Forthgill; he has, therefore, had recourse to other measures. After bringing away the phlegm by an antimonial emetic, he prescribes a medicine compounded of opium, ipecacuanha, and prepared natron, (carbonate of soda). To a child a twelvemonth old he gives one drop of tinct. of opium, five drops of ipecacuanha wine, and two grains of prepared natron, made into a small draught with syrup and water, and repeated every fourth hour. This medicine appears to have an antispasmodic and diaphoretic operation. When, by its use for some days, the whooping-cough paroxysms are rendered less violent and less frequent, he directs the ipecacuanha to be omitted, and the gum myrrh, in sufficient doses, to be substituted in its place; the proportions of opiate tincture and alkaline salt remaining the same. The myrrh is used not as an expectorant, but as a tonic; as such, he has found it preferable in this disorder, especially where the patients are very young, to the Peruvian bark. On what principle the alkaline salt acts he does not pretend to explain; but he asserts that the same beneficial effects are not produced by the opium and ipecacuanha, or opium and myrrh, when it is left out. He adds, that costiveness is to be prevented, during the use of these medicines, by proper doses of calomel and rhubarb. [Edinb. Med. & Surg. Jour.

ERRATA IN THE LAST VOLUME.

- Page 353, line 10 from the bottom, for "putrefactions," read petrifications.
358, bottom line, for "commence," read commences.
362, line 8 from the bottom, (in the notes) for "freight," read foreign,

A P P E N D I X.

*Correct List of all the Patents that have been taken out of the
Office of the Secretary of State.*

[Continued from p. 112.]

1801.

MACHINE for breaking flax, John Cannon, Jan. 17. Jaundice bitters, Jesse Wheaton, Jan. 17. Cotton gin, Ebenezer Whiting, Jan. 22. Improvement in sheathing vessels, Henry Guest, Jan. 26. Brewing with Indian corn, Alexander Anderson, Jan. 26. Condenser for heating wash in distilling, Alexander Anderson, Jan. 26. Axle tourniquet, Joseph Strong, Jan. 29. Improvement in the construction of stoves, William Henderson, Feb. 12. Improvement in evaporation, Thomas Bedwell, and Benjamin Henfrey, Feb. 12. Machine for making and heading nails, Michael Garber, Feb. 20. Hydraulic machine for raising water, Barnabas Langdon, Feb. 20. Improvement in boats to ascend rivers, &c. David Grieve, Feb. 30. Increasing the surface of evaporation for the purpose of distilling, Benjamin Henfrey, March 2. Boring machine for posts for fencing, Richard Weems, March 16. Veneering plough for cabinet work, William Stillman, March 16. Hydraulic engine, John Strong, March 24. Making and discharging chain and cleaver shot, Israel Hatch, March 24. Cut nails from iron hoops, &c. rendered tough, Nathan Kent, May 1. Stove, screw, and reel grain drying machine, David Ellicot, May 1. Impellent pump, Solomon Thayer, June 9. Nails milled out of heated rods, Jesse Reed, June 9. Extract of bark for dying, &c. Samuel Downing, June 12. Forcing pump, John Eveleth, June 13. Portable vapour bath, Charles W. Peale, July 16. Infusing oil into leather, &c. Henry Guest, July 16. A beaming machine, Jeremiah Ladd, July 17. Mill for grinding painter's colours, &c. Caleb Greene, July 23. Machine for extracting grain from straw, &c. Christopher Hoxie, Aug. 20. A machine for raising water, William Palmer, Aug. 25. Improvement for cooling and conveying up meal, &c. Gurdon F. Saltonstall, Aug. 21. Metallic fluted gin rollers, for cleaning cotton, Gurdon F. Saltonstall, Sept. 2. Manufacturing spoons, Thomas Bruff, Sept. 14.

Giving motion to wheels within cylinders, &c. James Sharples, Sept. 15. Mechanical powers for the use of wind-mills, &c. James Sharples, Sept. 15. Manufacturing pot-ash, Thomas Power, Sept. 19. Moveable suspended beam and scale, Samuel Wallis, Sept. 21. Air-pump ventilator for ships, mines, &c. Richard Robotham, October 10. Machine for ruling paper, &c. Richard Robotham, Oct. 10. A syphonic steam machine, John Poole, Oct. 13. Construction of stills, Michael Krafft, Oct. 28. Machine for cutting and heading nails, William Leslie, Nov. 5. Improvement in a wind-mill, John A. Morton, Dec. 16. Improvement in a ship's pump, George Clymer, Dec. 22. Making paper from currier's shavings, Joseph Condit, jun. Dec. 28.

1802.

Improvement in the art of engraving, Joseph Hutton and Gideon Fairman, Jan. 8. Improvement in a wind-mill, Rufus Hathaway, Jan. 20. Improvement in a time-piece, Simon Willard, Feb. 8. A machine for churning, Isaac Baker, Feb. 20. Improvement in boxes for carriages, Thomas B. Whitlock, Feb. 23. Improvement in paddles for propelling boats, Richard Claiborne, Feb. 23. Improved mode of carrying fish in warm weather, Nathaniel Robbins, March 11. Machine for cutting and grinding bark, Jacob Warrel, March 17. Manufacturing starch from potatoes, John Biddis, March 22. Improvement in a grist-mill, John W. Holly, March 27. Improvement in a saw-mill, which returns the log after each cut, Moses Coates, April 1. Improvement on a block-making gang-lathe, Ebenezer Whiting, April 1. Machine for ginning cotton, William Bell and Samuel de Montmollin, April 7. Machine for churning, Joel Pierce, April 10. Improvement, being a cheap mode of obtaining light from fuel, Benjamin Hensfrey, April 16. Extracting the essence of bark for dying, Samuel Downing, April 19. Machine for cleaning clover seed, Asher Spicer, April 22. Improvement in a saw-mill, Hezekiah Richardson, jun. and Levi Richardson, April 28. Machine for rolling iron round, &c. Henry Abbott, May 4. Improvement in casting close stoves, Henry Abbott, May 4. Improvement in flat roofs for houses and balconies, Henry Johnson, May 10. Mode of improving spirits, Burgiss Allison, May 12. Scientific steelyards, Lewis Du Pré, May 12. Machine for manufacturing salt, Benjamin Ellicott, May 12. New plan for printing music, Andrew Law, May 12. Machine for cutting fur for the use of hatters, Nicholas Young,

May 14. Machine for cutting nails, Edward West, July 6. Improvement in heading and cutting nails, Edward West, July 6. Improvement in a gun lock, Edward West, July 6. Improvement in a steam boat, Edward West, July 6. Improvement in pumps, Jacob Perkins, July 9. Machine for cleaning wheat, Stephen Stilwell, July 9. Machine for cleaning out docks, John Greenleaf, July 13. Method of rolling iron for nails, Jesse Reed, July 15. Improved machine for threshing and cleaning wheat, Ezekiel Miller, July 19. Machine for making bricks, Ezekiel Miller, July 17. Machine for cleaning clover seed, Martin Miller, July 19. Machine for threshing grain, Joseph Pope, July 22. Antibilious pills, Thomas H. Rawson, July 24. Machine for making nails, Nathan Fobes, Aug. 2. Improvement in a trigonometrical quadrant, James Templeton, Aug. 17. Improvement in a still, William Paine, Aug. 24. Improvement called a fire-stop, Elisha Putnam, Aug. 24. Economical house and ship steam kitchen, Nicholas Boureau, Aug. 30. Astronomical quadrant, Matthew C. Groves, Sept. 3. Machine for heading nails, Benjamin S. Walcott, Sept. 4. Improvement in fastening, in raising and supporting window sashes, Leonard Kennedy, Sept. 7. An evaporating furnace, John Richardson, Sept. 13. Machine for pressing cotton or other bale goods, Jacob Idler, Sept. 24. A steam engine (improvement in), Samuel Briggs, jun. Oct. 9. Machine for raising water [!!! a perpetual motion!!!] John Baptiste Aveilhé, Oct. 14. Improvement in splitting skins, Asa W. Chickering, Nov. 29. Improvement in extracting neutral salts from alkaline, Benjamin Gorton, Nov. 29. Improvement in erecting dry docks, John Gardiner, Dec. 3. Machine for making nails, William Caruthers, Dec. 13. Improvement in the construction of mill wheels, James Cowen, Dec. 14. Improvement in stills, John Staples, Dec. 15. Improvement in making salt, Valentine Peers, Dec. 18. Improvement in a boiling cistern, Timothy Kirk, Dec. 20. Antibilious stomach cordial, Simon Lozarus, Dec. 21. Improvement in the manner of welding cast steel to iron, &c. Daniel Pettibone, Ezekiel Chapman, and Josiah Nichols, Dec. 22. An insubmersible boat, Abm. Du Buc Marentille, Dec. 23. Improvement in manufacturing paper from corn husks, Burgiss Allison and John Hawkins, Dec. 30. Machine for sawing stone and marble, William Palmer, Dec. 31.

(To be continued.)